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ABSTRACT

Developed by the Multi-level Captioning Project, the manual provides guidelines for linguistically controlling reading materials for the deaf. An introduction describes the three proposed reading levels based on difficulty of vocabulary, syntax, and inference. Chapter 1, on vocabulary, considers word list sources, guidelines for controlling vocabulary, strategies for handling difficult vocabulary, and ways to define words in captioned materials. The second, and major chapter, by R. Wilbur is on syntax and includes the research basis for the syntax guidelines, approaches to language analysis, and the theoretical foundation of the guidelines. Most of the chapter consists of the specific guidelines concerned with such syntactical structures as determiners; demonstratives and adjectives; verbs and auxiliaries; prepositions, particles, and prepositional adverbs; negatives; questions; comparatives and superlatives; and relative clauses. A chart provides an overview of the syntactical guidelines for common relational words. The third chapter, by K. Wilson, is on inference and includes sections on the role of inference in language comprehension, categories of inference, an example of the use of inference, a perspective on the inferential process, deaf children's inferential abilities, and the guidelines for editing inferential material. The final chapter, by N. Decker, is on application of the guidelines and considers the editing and evaluation of news reports, basal readers and trade books, documents and instructions, and television scripts. (DB)

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Readable English for Hearing-Impaired Students

Multi-level Guidelines for Linguistically Controlled Reading Materials

Written by
Nan Decker
Mardi Loeterman
Jill Shulman
Ronnie Wilbur
Kirk Wilson

Edited by
Jill Shulman
Nan Decker

Multi-level Captioning Project
The Caption Center
WGBH-TV
125 Western Avenue
Boston, Massachusetts 02134
Telephone: 617 492-2777
TDD: 617 491-5724

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Table of Contents

Page

v **Preface**

ix **Introduction**

Chapter 1 **1 Vocabulary**

1 Word Lists

4 Guidelines for Controlling Vocabulary

6 Strategies for Handling Difficult Vocabulary

7 Defining Words in Captioned Materials

Chapter 2 **9 Syntax** by Ronnie Wilbur

9 Introduction

9 Research Basis for Guidelines

10 Approaches to Language Analysis

12 Theoretical Foundation of the Guidelines

15 Guidelines

2.1 Determiners, Demonstratives and Adjectives

2.2 Verbs and Auxiliaries

2.3 Adverbs, Adverbial Clauses and Adverbial Complements

2.4 Prepositions, Particles and Prepositional Adverbs

2.5 Pronouns

2.6 Negatives

2.7 Questions

2.8 Imperatives

2.9 Conjunction, Disjunction and Alternation

2.10 Comparatives and Superlatives

2.11 Relative Clauses

2.12 Complements

54 Overview of the Syntactic Guidelines

56 Word Index

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Chapter 3 **59 Inference** by Kirk Wilson

59 The Role of Inference in Language Comprehension

60 Categories of Inference

61 An Example of the Use of Inference

63 A Perspective on the Inferential Process

63 Deaf Children's Inferential Abilities

63 Guidelines for Editing Inferential Material

Chapter 4 **67 Application of the Guidelines** by Nan Decker

67 Editing News Reports

73 Evaluating Basal Readers and Trade Books

77 Editing Documents and Instructions

81 Editing Television Scripts

91 References

Preface to the Second Edition

Linguistically Controlled Reading Materials for Deaf Students

Language Acquisition

Hearing children grow up immersed in a world of sound and language. They learn to communicate verbally without conscious effort through constant exposure to speech. From the time of their birth, they overhear conversations, watch television, listen to the radio and records, and continually relate to parents, siblings and playmates through language. By the time these children enter kindergarten, they already have well-developed vocabularies and almost total mastery of syntactic structures. Furthermore, they have acquired the crucial ability to draw inferences by filling in implied meanings from conversations.

In dramatic contrast, most prelingually deaf children are deprived of even the most common and basic natural language experiences. And because they must rely primarily on vision for input, which requires direct contact with the speaker, incidental acquisition of language rarely occurs. Opportunities for learning by "overseeing" are infrequent. Thus, it is not uncommon for hearing-impaired children to enter school with almost no ability to communicate verbally.

Development of Reading Skills

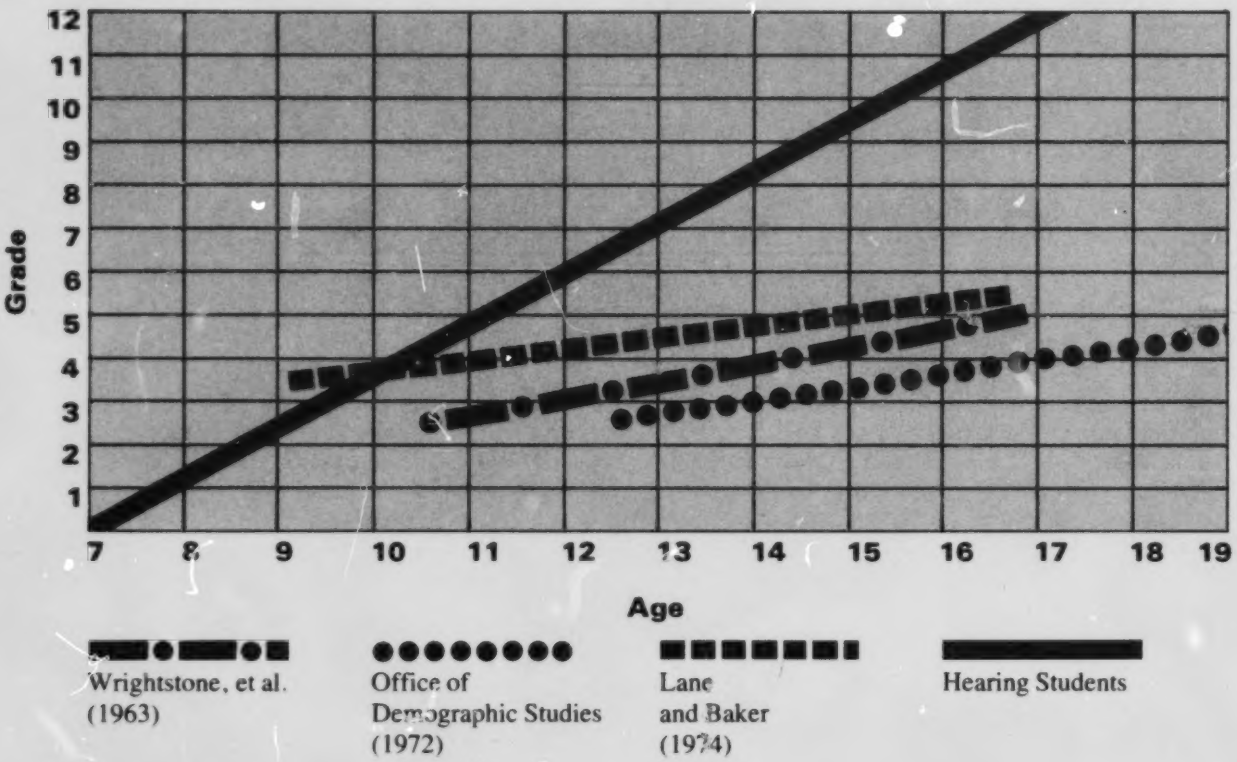
Ordinarily, reading is taught only after mastery of a first language is almost complete. In learning to read, hearing children associate the printed symbol with the known auditory referent. They already understand the meaning of most of the words they encounter in primers.

But when hearing-impaired children begin to read, they have no comparable linguistic base. Consequently, the task they face is drastically more difficult than that for their hearing peers: not only must hearing-impaired children learn the meanings of words and sentences, but they must also learn to recognize them in printed form. In effect, language and reading are taught simultaneously. The burden can be overwhelming.

Therefore, it is not surprising that the reading skills of deaf students develop, for the most part, significantly more slowly than those of hearing children; and most deaf children never catch up. The trend seems to be that from age 8 onward they fall further and further behind their hearing peers in reading comprehension. The average hearing-impaired student leaving school at age 19 scores at grade 4 on the Stanford Achievement Test (Trybus, 1978). Other studies indicate that even this figure may be inflated (Moores, 1967).

The findings of Wrightstone, et al., in 1963 and the Office of Demographic Studies in 1972 indicated similar "plateau effects" in two large-scale studies with deaf children tested with different measures of reading ability. As illustrated below, the 1963 study showed that the average gain in reading level of students age 10.6 to 16.6 was only 8 months from grade 2.8 to 3.5. The 1972 study showed gains from 2.95 to 4.36 in the seven years from age 13 to 19.

Reading Achievement Scores of Deaf (and Hearing) Students in Relation to Age



In 1974, a retrospective study of reading ability among a small sample of graduates from the Central Institute for the Deaf (Lane and Baker, 1974), although not supporting the notion of a "plateau effect," provided additional evidence of delay in the acquisition of reading skills and serious deficits in reading ability. Furthermore, it pointed out the increasing disparity with each passing year between the reading skills of deaf and hearing children. While 11-year-old C.I.D. students were 2.7 grades behind their hearing peers, by age 16, C.I.D. students lagged by 4.4 grades.

Ironically, in spite of the poor reading abilities of deaf children, there is some evidence that print materials may be the superior mode of conveying certain kinds of information to this population. One study has shown that, at least for factual material, deaf students comprehend more from print materials (written at or below the fourth grade level) than from oral or total communication (White and Stevenson, 1975).

Unfortunately, a great portion of the printed information the average deaf reader encounters will be too difficult to understand because of sophisticated vocabularly and syntax, use of idioms, and dependence on inference-drawing skills. Clearly, there is a need for edited materials which are tailored to the specific language and reading abilities of hearing-impaired students.

The Multi-level Captioning Project

At the WGBH Caption Center, recognition of the need for linguistically controlled captioned materials led to the establishment of the federally funded Multi-level Captioning Project in 1977. This special unit developed a system for captioning children's television programs. Multi-level captioning uses research-based guidelines for writing captions at any of three levels of

increasing linguistic complexity. At each level, guidelines present techniques for controlling three major areas of language: vocabulary, syntax, and inferential content. The captioner chooses the linguistic level which most closely meets the intended audience's reading level and, at the same time, can convey program content most adequately. The original script is then edited according to the guidelines for that level.

The Captioning Reference Manual

The guidelines developed during the first year of project funding were consolidated into the *Captioning Reference Manual*. This publication incorporates researchers' findings about deaf children's English skills, as well as the results of a study conducted by The Caption Center. This latter investigation determined which captioning level specific syntactic structures should be assigned to (Wilson, 1978). Where no research existed for certain linguistic elements, project staff relied on their own experience in communicating with deaf children to fit those elements into the most appropriate level of the guidelines. Although primarily intended for use by television captioners, complimentary copies of the CRM were also distributed to schools and programs for the deaf across the country.

Readable English for Hearing-Impaired Students

In 1978, the Multi-level Captioning Project received funding to continue its research and development activities for at least two more years. In addition, The Caption Center was awarded a grant to study the acquisition of specific syntactic structures which had not previously been investigated. These two grants resulted in the publication of the second edition of the *Captioning Reference Manual* under the new title *Readable English for Hearing-Impaired Students*. This second edition was desirable for two reasons. First, newly conducted captioning research and evaluations by The Caption Center showed that the original guidelines needed modification. Evaluations of deaf children's comprehension of multi-level captioned television programs indicated that reassignment of certain syntactic structures would provide clearer distinctions among the levels. And the additional syntactic research provided data on hearing-impaired students' comprehension of nine previously uninvestigated structures. Incorporation of these findings was necessary to reflect more truly the language abilities of deaf readers.

The second motivation for a revised edition came from readers' responses to the *Captioning Reference Manual*. The enthusiastic reaction by a diverse group of professionals indicated that there was great interest in using the guidelines for non-captioning purposes. The Caption Center has received orders for the manual not only from educators of the deaf, but from museums, educational clearinghouses, vocational rehabilitation centers, religious educators, public school systems, university and college teacher training programs, and public libraries. Clearly, people with a wide variety of concerns wanted to know more about preparing linguistically controlled materials for hearing-impaired readers. It seemed appropriate that the manual address their needs as well as those of the television captioner.

This new edition of the CRM represents the culmination of three years' work in developing guidelines for linguistically controlling reading materials. It surveys a broader range of information about deaf readers' abilities than has previously been treated under one cover.

Acknowledgments

We are grateful to those who contributed their help and expertise during the preparation of this second edition. Carole Osterer provided the administrative support necessary for its publication. Betsy Montandon and Annette Posell of The Caption Center, and Chip Bruce and Andi Rubin of The Center for the Study of Reading at Bolt, Beranek and Newman generously shared their ideas and suggestions. Gaye Korbet of the WGBH Design Department conceived the visual format. And, finally, our special thanks go to Nina Saltus, who prepared the final manuscript.

Introduction

Development of the Multi-level Guidelines

The multi-level system is based on guidelines for preparing print materials at three reading levels. At each level, three primary elements of language—vocabulary, syntax and inference—are analyzed and controlled in a developmental hierarchy. Level 1 represents the simplest level of linguistic complexity and the easiest reading task, and Level 3 the hardest.

Vocabulary
the meanings of individual words and of groups of words that together form idioms

Syntax
grammatical sentence structure

Inference
implied but not explicitly stated meanings

Formulation of the multi-level guidelines stemmed from three sources of information. First and foremost, project staff studied the extant literature on deaf children's language and reading abilities. Those research findings provided a base for the editing guidelines. However, there is not an equal amount of information available about vocabulary, syntax and inference. In general, there has not been sufficient investigation in any of these areas. Therefore, The Caption Center conducted some original research in order to improve the validity of the editing system. Finally, in the absence of any research, the experience of project staff was a valuable resource in setting up the multi-level guidelines. Personnel included captioners, former teachers of the deaf, linguists and psycholinguists specializing in deafness. Their judgments were based on years of teaching experience and familiarity with the way deaf children typically read and communicate.

Evaluation of the Multi-level Guidelines

To date, the validity of the multi-level system has been assessed primarily through evaluations of television programs captioned according to the guidelines. Over a two-year period, two successive studies were carried out to test deaf students' comprehension of different television programs, each captioned at each of the three editing levels (Murphy-Berman and Jorgensen; Braverman and Hertzog, 1980; Braverman, 1980b). These programs represented three distinct television genres: animated comedy, action-oriented adventure, and dramatic production. Some of the findings indicated that

- television programs with high verbal content and low visual information are most appropriate for multi-level captioning; i.e., this format produces significant differences in comprehension;
- the reading abilities of viewers is the most important factor in understanding captioned television programs; i.e., higher level readers comprehended more information than lower level readers;
- captions written at Levels 1 and 2 seem to be most useful for increasing comprehension of beginning or poor readers;
- captions written at Level 3 add new information and provide more elaboration of concepts than is possible at the simpler reading levels.

In addition to these two captioning studies, The Caption Center investigated deaf children's acquisition of certain syntactic structures which had not previously been studied (Wilbur, Goodhart and Montandon, 1980). The two captioning evaluations, combined with the results of the syntax testing, led to revisions and additions to the guidelines for this second edition.

There are a variety of ways to determine the validity of the multi-level editing system. Ideally, future research should be conducted to answer a number of important and interesting questions about the method; for example:

- In what contexts is this method of editing most suitable? e.g., Is it more effective with some kinds of materials than with others?
- What is the contribution of pictures, illustrations, and film/television video to understanding of multi-level versions of the associated text?
- What is the relationship between certain variable characteristics of readers, for example, age and reading ability, and different types of print materials? e.g., Can Level 1 be applied successfully in preparing readiness materials for younger readers with emerging skills?

In spite of these questions, the guidelines have been shown to be a valuable tool for deaf educators in particular. Questionnaires included with *The Captioning Reference Manual* asked users to rate each chapter according to usefulness, clarity of information, and adequacy of scope. Respondents consistently indicated a high degree of satisfaction and unanimously endorsed the manual.

Overview of the Multi-level Editing System

Vocabulary

In the editing process, each word in the original text is evaluated in terms of the level of sophistication required to understand it in isolation, within the sentence, and in the context of the overall narrative. Particular attention is given to words which have more than one meaning and therefore are subject to misinterpretation. In addition, idioms are noted and carefully considered. Once vocabulary is assessed, the writer then makes a decision to retain the original item or substitute a simpler word.

The Vocabulary chapter of this manual begins with an introduction concerning the development of word knowledge in hearing and deaf children. It discusses standardized vocabulary lists, words which have multiple meanings, and idioms. This chapter explains strategies for handling difficult words which must be retained in the edited text, and ends with a discussion of techniques used for defining difficult words in captioned materials.

Syntax

In investigating the relevant syntactic literature, we found that a large part of the research data on deaf children's language is based on production tasks, usually written language samples, so that in many instances we had to infer how this data would then apply to reading skills. Certain syntactic structures have been studied more thoroughly than others, while some have received almost no attention. This edition of the manual incorporates findings noted above from The Caption Center's syntactic research into deaf students' comprehension of some previously uninvestigated structures.

In the Syntax chapter, for each syntactic structure there is an explanation of the structure, a brief description of how deaf and hearing children learn that structure, and then the guidelines themselves.

Inference

A listener or reader understands the literal meaning of sentences and conversations by interpreting syntax and word meaning. However, not all of the meaning is derived from this process. Additional meaning comes from information which is not overtly stated in a conversation or narrative but which the listener or reader fills in. This process of elaborating meaning is called inference and it is crucial for understanding of language. However, it is an area of language comprehension which is not very well understood and has not yet been studied in great detail, even in hearing subjects.

As they mature, children develop the ability to draw inferences and to clarify inferential material. Just as vocabulary and syntactic development is slower in the hearing impaired, the development of the ability to draw inferences is also severely delayed. This manifests itself not only in conversation but also in reading comprehension. Control of inferential content is considered essential in the multi-level editing system.

In the Inference chapter of this manual, our intention is to heighten awareness of how language comprehension is dependent on the ability to draw inferences. Four categories of inference are defined and illustrated, and general guidelines for handling inference at each editing level are presented.

Application of the Editing System to Various Texts

The guidelines presented in this manual provide a unique and practical approach to writing many types of original reading materials, as well as to editing text written for the general hearing population. Anyone who prepares lessons, curricula, surveys, questionnaires, newsletters, captions or other information for the hearing impaired should find the multi-level system helpful in making their materials understandable to their intended readers. Furthermore, those who are responsible for judging the appropriateness of written materials for deaf populations will find this manual a useful tool in guiding their assessments.

The language editor's job varies according to the kind of text being prepared. The final chapter of this manual highlights some of the characteristics of certain kinds of print materials. Special considerations are described which are helpful in editing or evaluating newspaper reports, reading series and trade books, documents and instructions, and television scripts. Samples of each kind of text in edited form are given in order to increase the reader's understanding of the way that the vocabulary, syntax and inference guidelines work together to create an edited version.

Vocabulary

Introduction

The hearing child entering kindergarten has a vocabulary of 3,000 to 5,000 words. In contrast, the language-deprived deaf child may begin school knowing as few as 25 to 50 words. Research has shown that this gap in word knowledge between deaf and hearing students remains significant and usually widens throughout the school years. Walter (1978) found that 14-year-old hearing-impaired students are considerably below 10-year-old hearing children in their knowledge of the most frequently used words in printed English. 18-year-old hearing-impaired students have an average vocabulary level of about fourth grade (Cooper and Rosenstein, 1966; DiFrancesca, 1972). Comparison of writing samples of deaf and hearing students has also shown deficiency in the vocabulary development of the deaf writers, who show more redundancy in use of words (Simmons, 1962).

Such findings make it clear that in designing print materials for hearing-impaired students, word choice must be carefully considered. Some writers know the vocabularies of their readers well and prepare materials for a homogeneous group. Others do not have the advantage of knowing the word knowledge of the intended readers. In both situations, some systematic approach is necessary to assess word difficulty, and to substitute synonyms or to select alternate words at the appropriate level.

This chapter describes the approach used by the Multi-level Captioning Project to determine the difficulty of words and presents a framework for making word choices.

Word Lists

General Characteristics

A large number of word lists are available which rank difficulty of vocabulary, and virtually all have been designed for hearing populations. These word counts differ in purpose, scope, organization and content. Words are ranked either by frequency of occurrence in specified print materials, or by grade or age at which readers first understand them, and additionally may be categorized by part of speech (noun, verb, adverb, etc.). The length of lists ranges from as few as 200 words to tens of thousands.

Variations in the specific words included on each list is mainly a function of the source material used in compiling the list. Sources include one or more of the following: basal readers, textbooks, recreational reading materials, newspapers and periodicals, test results and writing samples. A second reason for variation in content is year of publication; for example, more current lists will incorporate words that come into use because of new technology. The appropriateness and value of each list for preparing print materials will depend on the abilities of the intended readers and the purpose of the material.

Lists for the Hearing Impaired

There are two published word lists which have been compiled specifically for hearing-impaired children: *Vocabulary Norms for Deaf Children* by Silverman-Dresner and Guilfoyle (1972) and *Basic Vocabulary and Language Thesaurus for Hearing-Impaired Children* by Daniel Ling and Agnes Ling (1977).

Silverman-Dresner and Guilfoyle tested 13,207 hearing-impaired children from ages 8 to 17 from 89 schools for the deaf in the United States. This test was designed to determine words known by at least 50% of children sampled in five age groups. The resulting word list is categorized both by part of speech and by age. However, because of the construction of the test, the list may not accurately reflect the word knowledge of the subjects. For each stimulus word, students were asked to find a synonym or definition from four possibilities. The researchers concluded that an incorrect response meant that the child did not understand the word. But the wrong choice might have resulted from not understanding the synonym or the definition. For example, the authors determined that *day* was known by at least 50% of all tested 12-year-olds but not by 50% of 8- and 10-year-olds. The authors' definition of *day* was "time

between sunrise and sunset." Clearly, an 8-year-old might not have understood the definition, even though the child could read *day*. There are many instances where the words used to define test items seem more difficult than the test items themselves. Therefore the vocabulary norms should be applied with caution.

The Ling thesaurus is a compilation of the most frequently used words from the "spontaneous language used by normally hearing children up to 7 years of age" and from early reading material. Words are categorized semantically (e.g., "Tools and Implements," "Health and Illness," "People") and placed into one of four groups of decreasing importance and frequency of occurrence. The first three groups contain "words which form a basic minimum reading readiness," and the fourth group contains vocabulary common in the first years of school. Editors may use the Ling list primarily to find synonyms for difficult words or to find words in a particular semantic category.

Criteria for Evaluating Suitability

Word lists are helpful resources during the editing process. The Multi-level Captioning Project has developed five criteria for judging the usefulness of a list:

1. The list should present words alphabetically so that words may be located quickly and easily.

2. The list should comprise a sizeable number of words. Many materials to be edited contain specialized words related to content. For example, in a television program about a young football player, the original script used *football, quarterback, hike, player,* and *coach*. Lists of at least several thousand words are more likely to include such key content-related items.

3. The list should contain irregular inflected forms. Inflected forms are variations of the root word, such as plurals and tenses. Adding *-s, -ed, -ing, -er, -est,* for example, forms regular inflected words; *feet* and *brought* are examples of irregular inflected words. Not all word lists incorporate inflected forms, but lists with at least irregular inflected forms are preferred, since one cannot make assumptions about the ability of the hearing-impaired child to understand all inflected forms of a word once the root word is known.

4. The list should rank words by grade level, rather than by age at which the words are understood. This is important because the reading abilities of different hearing-impaired children of the same age often vary greatly. However, school programs usually administer standardized reading tests, so that the student's approximate reading grade level is known. In addition, rankings should begin at least at the first grade level, since the majority of deaf students read at or below the fourth grade level. And, since the multi-level editing system limits vocabulary at Level 1 to first and second grade, the lower limit of grade level rankings is a particularly important criterion. Some lists (for example, the *American Heritage Word Frequency Book* by Carroll, Davies and Richman) don't include words below the third grade level and therefore are not very useful.

5. The list should be based primarily on words found in basal reading series. Because a great many teachers of the deaf use these readers in their classrooms (LaSasso, 1978), these sources are more appropriate than textbooks and periodicals, for example, which require a large amount of editing for the hearing impaired.

Of the many word lists available, only the *Revised Core Vocabulary* (Taylor, Frackenpohl and White, 1969) for grades 1 to 8 from Educational Development Laboratories (EDL) fulfills all five criteria. It contains an alphabetical listing of over 6,000 words ranked by grade and includes irregular inflected forms. For grades 1 to 6, a word was assigned to a grade level when it occurred in three out of nine basal series at the same grade level.

The following chart presents pertinent information on the word lists more widely known and/or frequently consulted by the staff of the Multi-level Captioning Project.

Word List Chart

Word List	Sources	Critera for Inclusion on List	Total Number of Words	Type of Ranking	Inflected forms
American Heritage Word Frequency Book (Carroll, Davies & Richman, 1971)	500-word samples from 1,000 books ranging from poetry to encyclopedias	All words from samples (including abbreviations, initials, numerals, proper names, etc.)	86,741	Total frequency (number of occurrences) with supplementary data on frequency at each grade level and in each of 22 categories	Yes
Basic Elementary Reading Vocabularies—Core List (Harris & Jacobson, 1972)	Six basal reading series for grades 1 to 6	Appears at least once in at least half the series at a given grade level	5,167 (core words)	Ranked from pre-primer to grade 6	Only irregular forms
Basic Vocabulary & Language Thesaurus (Ling & Ling, 1977)	a. Spontaneous language of young hearing children b. Common words from early reading material	Criteria vary with category: 1. 500 most frequent words 2. 2nd 500 most frequent words 3. Words form basic minimum reading readiness 4. Words should be used in early school life	Approximately 2,000	Four categories of decreasing difficulty	None
A Revised Core Vocabulary Grades 1-8 (EDL) (Taylor, Frackenpohl, & White, 1969)	Nine basal reading series for grades 1 to 6	Must occur at or below a common grade level in three of the nine readers	6,991	Ranked from primer to grade 8	Only irregular forms
Teacher's Word Book of 30,000 Words (Thorndike & Lorge, 1944)	A limited number of pages from hundreds of reading materials including fiction, periodicals & textbooks	30,000 most common words in materials surveyed	30,000	Frequency of occurrence in general reading materials and in specialized categories of reading materials	Only irregular forms
Vocabulary Norms for Deaf Children (Silverman-Dresner & Guilfoyle, 1972)	Selected words from: a. Dale list of 3,000 familiar words b. *Children's Knowledge of Words* (Dale and Eichholz)	Known by at least 50% of deaf subjects in five age groups from 8 to 17	7,290	Ranked by earliest age known and percentage correct	None

Guidelines for Controlling Vocabulary

Word Lists

Consulting word lists for rankings is an initial step in assigning words to one of the three levels. The following correspondence between grade level and editing level provides a framework for word selection.

Level 1: Grades 1 and 2
Level 2: Grade 3
Level 3: Grade 4

The fourth grade ceiling may surprise those not familiar with the reading abilities of prelingually deaf children. However, the above correspondence reflects the general performance of hearing-impaired students on standardized reading tests (Trybus, 1978).

The multi-level system does not adhere to a strict formula for assigning words to each editing level. It is important that the editor's personal experience and knowledge of the deaf population be brought to bear when referring to word list rankings. Word selection must not be rigidly limited by grade level. For example, EDL lists *hamburger* at grade 5; yet it is not inappropriate to use this word at Levels 2 and 3 because, traditionally in schools for deaf children, students learn many words from certain semantic categories (such as food, body parts, and animals) at an early age.

Content Words vs. Function Words

Because many vocabulary words (e.g., *such, by, as, while,* and *for*) have syntactic functions, word choices based only on grade level are inadequate. These words, which pose no difficulty for hearing children, are particularly troublesome for the hearing impaired. Studies have indicated that deaf children have less difficulty learning *content* words (nouns, verbs, adjectives), which often have a concrete referent, than learning *function* words (conjunctions, prepositions, auxiliary verbs, pronouns and some adverbs), which are usually difficult to explain (Brannon, 1968; MacGinitie, 1964). It has been estimated that function words account for more than one-half of the words we utter (Miller, 1951). Therefore, although functors may be ranked on vocabulary lists at lower grade levels, editors must remember that, because of their syntactic nature, these words may not be understood by the deaf child until a much later stage of development. Decisions about these types of words are better made by referring to the syntactic guidelines.

Multiple Meanings

Most words in the English language have more than one meaning, and many can function as more than one part of speech. For example, *fire* as a noun may mean *flame* or *severe trial or trouble;* as a verb it may mean *to shoot*, as a gun, *to apply heat to in a kiln* or *to terminate from employment*. The major word lists rank *fire* as a first-grade word; however, if a hearing-impaired first grader read *Mr. Smith fired the plumber*, the child almost certainly would misinterpret the sentence.

Few standardized word counts itemize words according to multiple meanings or indicate part of speech. Apparently, when words with additional meanings are assigned a grade level or other type of ranking, these variations in meaning are not considered important for hearing readers. Perhaps the assumption is that once a word is understood in one sentence context, it is understood in all contexts. Only one word list accounts for multiple meanings, including idiomatic ones. This is *The Living Word Vocabulary* (Dale and O'Rourke, 1976), which ranks over 43,000 words according to grade level and lists different meanings of a word separately. For example, *attend* is ranked at four different grade levels according to four different meanings:

Meanings of *attend*	Grade ranking
– be there	4
– accompany	6
– pay attention	8
– take care of	10

Unfortunately, this extensive list is not useful in the multi-level system, since it only includes words above the third grade level. However, it is helpful for determining multiple meanings of words and getting a sense of their relative difficulty.

Writers should become familiar with multiple meanings and take into account the limitations of word lists in this regard. It must be remembered that, despite a low grade-level assignment of some words, difficulty will vary in different contexts. We do not know the understanding early readers or hearing-impaired children have of these words. Therefore, intuition and a general understanding of deaf children's reading problems will be the best guides in judging difficulty until further research is conducted.

Idioms

Idioms involve the use of words in a non-literal sense. They defy the rules of grammar or logic and often cannot be understood from the meaning of their separate components. Metaphors and similes may be considered in this classification. People are often unaware of idiomatic usage in speech and written materials, but it has been estimated that it comprises up to two-thirds of our language (Boatner and Gates, 1969).

Very few investigations have been made into deaf children's comprehension of idioms. One study (Conley, 1976) found that, from the third grade on, scores of deaf children on a test of idiom comprehension were significantly lower than for their hearing counterparts. It is not surprising that deaf children's understanding of idioms is poor, given their problems with literal English.

The editor must be constantly alert for idioms in the original text. Several criteria may be applied in deciding whether idioms should be retained, substituted or deleted. The following guidelines are based on vocabulary and syntactic considerations, as well as common sense:

1. An idiom should only be used if its component words are allowed at a given level. For example, an expression such as "follow the map" would be used at Level 2, but not at Level 1, because the constituent words are at or below grade 3.

2. The syntactic structure of the idiom must be consistent with the editing level at which it appears. For example, "I bet Phil has kids" could be used at Level 2 because that-complements (see Syntax chapter, section 2.12 are allowed at Level 2.

3. More literal idioms should be chosen over those that are more abstract. It is always helpful if the idiom contains a word which is directly related to the context. For example, "Come right out" would be preferable to "Make it snappy" since the reader of the first idiom would at least understand the words *come* and *out*, whereas the second contains no words to indicate movement or speed.

Few idioms are incorporated at Level 1. Those used are limited to common expressions which cannot be misconstrued if interpreted literally. Examples of idioms appropriate at Level 1 are:

- Come on.
- Hurry up.
- Have fun.
- How are you?

At Level 2, more idioms are included, but usage is still greatly restricted. Some unsupported common idioms are used, but editors must still be cautious, choosing more literal idioms directly supported by the context. Examples of Level 2 idioms are:

- I like to take pictures.
- Set your watch.
- You made a mistake.
- I don't care.

At Level 3, many idioms from the original material may be retained, while simpler expressions may be substituted for more difficult ones. Examples are:

- I can't wait!
- It doesn't matter.
- Of course not.
- That's none of your business.

Idioms make language interesting and fun, adding to reading enjoyment. So, when the original copy has an idiom which is beyond the reader's comprehension, editors should try to replace it with a phrase or word which is equally flavorful, but more understandable to the deaf reader. A good reference on idioms with definitions geared to the deaf is *A Dictionary of Idioms for the Deaf* (1969) by Boatner and Gates.

Strategies for Handling Difficult Vocabulary

Word lists are very helpful in judging word difficulty and finding appropriate substitutions for difficult vocabulary. But it is not always possible to make text more readable simply by replacing difficult words with simpler ones. In these cases, two suggested techniques are presented below.

Direct Definition

The easiest way to deal with a difficult word is to define it explicitly within the text, as illustrated with the word *inmates*.

> •There was a bad fight in a jail in Detroit yesterday. Five inmates were hurt. Inmates are people who live in a jail.

Care should be taken not to define a word incorrectly by writing a definition which refers to its meaning in one specific context only. The following example demonstrates this kind of error:

> •President Carter wants a tax on imported oil. Imported means other countries send the oil to the United States.

In the context of this example, the term *imported* refers to oil and the U.S. But the editor should not mislead readers into thinking that this is always the case. In various contexts, *imported* might refer to other commodities and other countries. A more accurate definition might be:

> •Imported means bought from a foreign country.

Yet this definition is probably too abstract for most deaf students to understand, as well as too syntactically complex. Who buys what from which foreign country?

In the example above, where the term to be defined occurs within a phrase, a more comprehensible passage results from defining the entire phrase. So, it is preferable to explain *imported oil* (with the qualification *In the United States* to give a truly accurate definition).

> •President Carter wants a tax on imported oil. In the United States, imported oil is oil that the U.S. buys from other countries.

Indirect Definition

Notice that in the above example *imported* stands within the larger noun phrase *imported oil*. This allows the editor to directly define a specific sense of *imported*. However, in many cases, the editor must deal with a word which stands alone; it is not contained within a larger phrase which can be directly defined with ease. An example of such a word is *candidate* in the sentence below.

> • Ronald Reagan is a candidate for president. He is going to Philadelphia today.

It would be awkward to define the word *candidate* directly here; to do so would disrupt the discourse. Furthermore, the standard dictionary definition is difficult to paraphrase in simpler language:

> *Candidate:*
> One who offers himself or is offered by others for an office, membership, or honor.

In such cases, a word above grade level may be indirectly defined by a sentence or sentences after its appearance. The following treatment of the words *candidate* and *news conference* demonstrates indirect definition in news editing:

> •Ronald Reagan is a Republican candidate for president. He wants to be the next president of the United States.
> •President Carter will have a news conference. At the news conference, many people will ask questions. The people work for newspapers, television stations and radio stations. Carter will answer their questions.

While this approach requires the reader to infer that the second sentence explains material in the first, it seems to be the most graceful way to deal with such problems.

In both direct and indirect definitions, the meaning seems clearer when the editor uses the difficult word first and then writes the definition, rather than vice versa. Consider the next sentences.

> •The Iranian people will vote for a group of people to approve new laws. This council will talk about Iran's problems.

In the second sentence the reader must infer that *council* refers to *a group of people* and not, for example, *the Iranian people* or even to *new laws*. Such an inference might be difficult for a person who does not read well. The meaning seems clearer in the version below.

•The Iranian people will vote for a council today. The council is a group of people. The council will talk about Iran's problems.

Defining Words in Captioned Materials

There are two methods which captioners may find helpful for defining words. Support from the background video and the use of indirect definition in captions can clarify meaning when difficult items from the original script must be retained.

Direct Definition by Video Support

The first technique is to use the word when it is video supported; i.e., when the television picture helps to define the word. For example, in one captioned program the word *skateboard* was crucial to a particular scene. In this case, whenever a caption containing this word appeared, it was in conjunction with its referent on the screen, allowing the reader to associate word and picture. Other examples in which verbs at Level 1 were explained through video support are:

[Pet my dog.]*

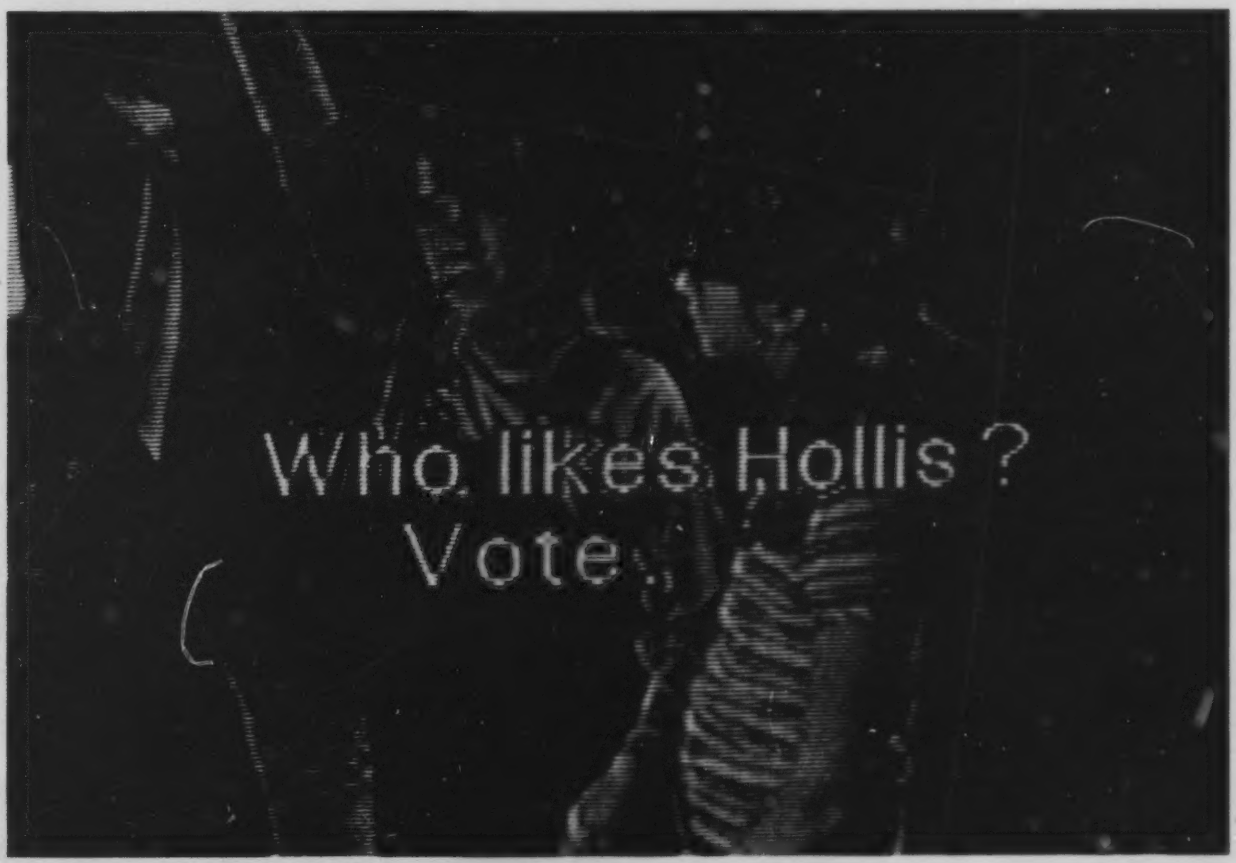
Following display of this caption, the characters pet the dog.

[Who likes Hollis? Vote.]

After this caption, the characters respond by raising their hands.

Using this captioning technique repeatedly with the same word further reinforces meaning and may help to teach new vocabulary. However, this is a complex procedure since it involves carefully manipulating the timed display of captions. Not only must the vocabulary be paired with its referent, but the caption must remain on the screen long enough to be read while allowing time for the associated picture to be scanned by the viewer.

*Each bracketed example represents a single caption. Only one caption is displayed on the television screen at one time.



7

Indirect Definition through Captions

Of course, it is not always possible to find visual support for difficult vocabulary. Then, another way to clarify meaning is to define a word through preceding and/or subsequent captions. For example, in a Level 1 program, it was important to retain the word *blind*. (EDL lists *blind* at grade 3.) In this case, the word was introduced and then defined in the next caption.

[Chad is a *blind* boy.]
[Chad can't see.]

Another program presented similar problems with the word *divorce*. In isolation, *divorce* would be considered too difficult to understand at any captioning level: EDL ranks it at grade 8. However, it was included in a caption and then defined through adjacent captions. This procedure also reinforced the concept of divorce. The progression of captions was as follows:

[We were married before.]
[We had many fights.]
[We were sad.]
[We are not married now.]
[We are divorced.]

In this last example, the word *nickname* is defined through a series of eight captions in which the difficult word appears in three different sentences.

Speaker 1: [Eileen...]
Speaker 2: [Call me "Lee."]
Speaker 1: [I like "Lee."]
Speaker 2: [That's my *nickname*.]
[What's your *nickname*?]
Speaker 1: [I don't have one.]
Speaker 2: [I will think of a *nickname*...]
["Chicken."]

Chapter 2

Syntax

Introduction

This section presents guidelines for controlling the syntax of written materials. These guidelines may be applied both in the modification of pre-existing materials, such as television scripts and textbooks, and in the preparation of original materials. The research and linguistic foundations from which the guidelines were derived are presented, followed by the guidelines themselves.

Research Basis for Guidelines

The syntactic guidelines contained in this manual are based primarily on recent research into the ability of hearing-impaired students to comprehend and produce various English structures. A major portion of this research comes from the *Test of Syntactic Ability* (Quigley, et al., 1976). The research version of the TSA includes subtests which investigate comprehension, production, and the ability to distinguish between grammatical and ungrammatical sentences. Subjects for the study ranged in age from 10 years to 18 years, 11 months. The data collected by the TSA are valuable and relevant to the text-editing process because the TSA test items were presented in written, and not spoken or signed, form.

The results of this research with hearing-impaired children provide detailed information about which constructions are hard or easy for deaf students at different ages and reading levels. Those structures which were shown to be too difficult for the oldest subjects in the study were excluded from use at any of the editing levels.

Supplementary research conducted by The Caption Center looked at deaf children's acquisition of the following nine syntactic structures (Wilbur, Goodhart and Montandon, 1980):

- quantifiers
- modals
- elliptical constructions
- non-locative prepositions
- reciprocal pronouns
- indefinite pronouns
- why questions
- comparatives
- conditional sentences

These constructions are commonly used in spoken and written English, but had not previously been studied. On the basis of the findings, a developmental pattern was established for deaf students in the acquisition of the structures. The hierarchical pattern indicates the age level at which the structures generally become understandable in written receptive form and used in written expressive form. The findings were then incorporated into the multi-level guidelines.

In cases where no data are available on structure difficulty for deaf students, the structures were assigned to levels based on the presumed complexity within the framework of transformational grammar (described in the following section, "Approaches to Language Analysis").

Several additional principles guided the decisions for organizing structures into levels of difficulty. In general, deaf children's development of English syntax lags behind that of hearing children; however, the pattern of development is sufficiently similar that, when information was available only on hearing children, it was applied to deaf students.

It was also assumed that certain constructions may be theoretically complex but, because of their frequency of usage and/or inclusion in the early portions of language curricula for deaf children, they should be allowed at a lower level than might otherwise be expected. For example, although contraction of *not* is not allowed until Level 2, *can't, don't* and *isn't* are nonetheless permitted at Level 1 because of their common usage.

Occasionally, the guidelines include structures which are relatively difficult, yet are necessary for conveying basic meanings. For example, research conducted by The Caption Center found that deaf children had a great deal of difficulty understanding the modal verbs *can* and *may*. These words should not be used until Level 2; however, it is impossible to express many basic ideas without them. Therefore, they appear in the guidelines at Level 1.

Finally, it was sometimes necessary to rely on intuitive judgments of Caption Center staff concerning the appropriate level of particular structures. The combined academic backgrounds and professional experience of staff members in the relevant fields of deafness and linguistics provided the expertise necessary to make these decisions.

There are also several points which must be kept in mind regarding the limitations of the research from which the guidelines were developed. Much of the information was taken from syntactic tests which presented sentences in isolation. Often, this underestimated the student's comprehension of connected written discourse, since contextual support no doubt aids interpretation of syntactic structures. Thus, in a very real sense, the guidelines are conservative estimates of the constructions which can be read and understood by deaf children.

Another limitation of some of the research data is that it didn't take into account the influences of language curricula on student performance. Thus, one group of students may have learned a particular structure while others at the same age or reading level, perhaps at a different school, may not have. These differences washed out when results were generalized across all types of schools and teaching methods. The research results, therefore, may not be true for any one particular group of children. Users of the guidelines, particularly teachers of deaf students, may be inclined to look at a prohibited structure and think, "But my students know that." However, editors must often write for populations whose individual abilities are unknown; thus, they must depend on data which describe the abilities of the average reader.

Approaches to Language Analysis

Since the beginning of the twentieth century, at least three different approaches to language analysis have enjoyed popularity among theoretical linguists. These various linguistic theories have had an influence on teaching language in the classroom and on investigations into language development and disabilities. The linguistic framework may affect the way that researchers state their hypotheses, the way they construct their experimental methods and measures, the way they word their conclusions, and the way they formulate their suggestions for applying the research to teaching.

Classical Framework

The teaching of deaf children prior to the 1920s reflected the classical model of language. Classical grammarians viewed language as analyzable into *parts of speech*. These parts of speech were then used to build sentences according to grammatical principles which were taught in school and had to be memorized. The Wing symbols (Wing, 1887) are probably the best known method of teaching language to deaf children within the classical framework. There are eight essential symbols which the student must memorize and associate with appropriate classes of words. Patterns are completed through the use of numbers and special symbols. Research within this framework might then concentrate on how many nouns or verbs a deaf child knew, or whether the student could associate the nouns with their proper symbol. This information ignores sentence structure and deaf students' difficulty with it.

Structural Framework

Beginning in the 1920s, structural linguistics (Sapir, 1921; Bloomfield, 1933) began to place greater emphasis on the sentence itself rather than the parts of speech. In the structural model, parts of speech were not determined out of context, but rather they depended on the *function* of the word in a particular sentence. For example, in the sentence "I will see John tomorrow," *tomorrow* functions as an *adverb*

and answers the question *when*. But in the sentence "Tomorrow is my birthday," although *tomorrow* still answers the question *when*, it seems to be functioning as a *noun* which is the subject of the sentence. Similarly, in the sentence "Tomorrow morning, school will be closed," *tomorrow* functions as an *adjective* describing *morning*. This would cause considerable debate within a classical framework but, within the structural framework, the various functions are accounted for.

The Fitzgerald Key (Fitzgerald, 1949) is a teaching instrument which characterizes application of the structural framework to the teaching of language. Using the Key, a sentence is divided up and the words are placed in the appropriate column which is headed by a function word (*who, what, where*, etc). Studies of deaf students' problems with English conducted within this framework categorize the errors in terms of omissions, substitutions, redundancies, and word order problems (cf., Myklebust, 1964). These categories do not prove to be very helpful in explaining why deaf students make the mistakes that they do.

Transformational Framework

These earlier models all assumed that language was learned by simple imitation. A more recent theory, *transformational grammar*, was first offered by Noam Chomsky in 1957. Chomsky argued that since any sentence can be made longer and longer, there are an infinite number of sentences in a language, and a child could not possibly learn all of them. Instead, there must be a small set of rules or principles which can be used to create all the sentences of a language.

Within Chomsky's framework, the emphasis has been shifted from the pattern of a single sentence to the rules which can combine in different ways with different words to create different sentence patterns. These rules, called *transformations*, add complexity and variety to utterances. They allow the speaker to alter basic sentence patterns by rearranging word order, adding or deleting phrases, and combining simple sentences into more complex syntactic forms.

Central to this theory is the concept that all sentences have both a *deep structure*, which contains the meaning of the sentence, and a *surface structure*, which is the form of the sentence as it is used in communication. The surface structure generally is derived from one or more transformations of the deep structure. Although the child does not actually learn the rules, Menyuk (1964) demonstrated that the framework of transformational grammar was helpful in describing the language development of normally hearing children. There is a general trend for them to learn constructions deemed easier by the transformational framework before harder ones, and constructions described by single transformations before those described by several transformations.

Recent research into deaf students' problems with English conducted within a transformational framework includes the *Test of Syntactic Ability*. (Quigley, et al., 1976). The results from the TSA indicate that there is a general correspondence between the order of acquisition of syntactic structures by hearing children and the order of acquisition by deaf children. Also, the structures which are easiest for deaf students to learn are those which require fewest transformations. A recent attempt to incorporate transformational grammar into the language training of deaf students is the Rhode Island School for the Deaf Language Curriculum (Blackwell and Hamel, 1971).

Theoretical Foundation of the Guidelines

The theory of transformational grammar is particularly appropriate for the creation of the syntactic guidelines because it makes it possible to understand how the form of expression may be systematically varied while the basic meaning is retained. When applying transformational grammar to writing print materials at levels of increasing complexity, the writer can alter the surface structure while maintaining the meaning of the deep structure. It also offers a framework for analyzing the structure of English so that distinct levels of linguistic complexity can be determined.

Within transformational grammar, the rules are divided into *phrase structure rules* and *transformational rules*.

Phrase Structure Rules

The phrase structure rules specify the structure of phrases: the elements in a phrase and the order in which they occur. In order to identify structures so that they may be located in the guideline sections, only four phrase structure rules need be mentioned.

1. A *sentence* contains a noun phrase followed by a verb phrase.

- Flora grabbed the bull by the horns.

2. A *noun phrase* may contain a determiner, an adjective, a noun and a prepositional phrase. Only the noun is required; the other elements are optional. However, if they appear, they must occur in the order given.

- a solitary walk in the dark

3. A *verb phrase* may contain a verbal auxiliary, a main verb, an object noun phrase, an adverb and a prepositional phrase. Only the main verb is obligatory; everything else is optional.

- was sitting demurely in the corner

4. A *prepositional phrase* contains a preposition followed by a noun phrase.

- with tact

Transformational Rules

The rules which have been discussed so far produce a large set of basically simple sentences. But there are many different types of sentences which cannot be described with just the basic phrase structure rules; another set of rules, known as transformational rules, is needed to describe the more complicated sentences. Transformational rules may change basic sentence structure by moving, adding or deleting elements. As a result, the sentence may end up looking quite different from the sentence originally generated by the phrase structure rules. Knowledge of the transformational rules allows one to recognize structures within a sentence and to remove them if necessary to make the sentence simpler, or conversely, to make simpler structures more complex by applying the rules.

The remainder of this chapter describes some basic transformational rules in English.

Pronoun Usage

In the phrase structure rules, no mention is made of pronouns. Therefore, any sentence which contains a pronoun must be described by the transformational rule of pronoun usage: pronouns may replace nouns in any of the places where nouns appear in the phrase structure rules (see section 2.5). So, as illustration, pronominalization may be used in the following ways for the sentence "Mary gets heartburn from eggplant":

- *She* gets heartburn from eggplant.
- Mary gets *it* from eggplant.
- Mary gets heartburn from *it*.
- *She* gets *it* from eggplant.

Negation

The negative is another type of sentence which requires a transformational rule. All phrase structure rules describe positive sentences. The negatives (see section 2.6) are considered to be formed by a separate rule of negation which puts the negative into the correct part of the sentence. When the verb phrase (see section 2.2) contains an auxiliary (a helping verb), which may be either a modal (*can, should, might,* etc.) or a linking verb (forms of *be,* or *have*), then *not* goes right after it.

- They could*n't* imagine who would want Louella's autograph.
- He is *not* as dumb as he looks.

Subject-auxiliary Inversion

The subject-auxiliary inversion rule is used in question formation. A statement containing an auxiliary verb can be converted into a question by changing the order of the subject and the auxiliary verb.

- *Harriet was* dreaming she was in the arms of another man. ⧫
  Was Harriet dreaming she was in the arms of another man?

Do-support

The do-support rule is used in both question formation and negation when there is no auxiliary present. In question formation, the do-support rule inserts a form of *do* before the subject.

- *Did* the drop in oil production cause serious problems?

To form negative sentences when there is no auxiliary, *not* is placed after a form of the verb *do*.

- Alice *doesn't* live here anymore.

Imperative Formation

Another common modification of sentence structure is the command, also called the *direct imperative*. Transformational linguists treat the imperative as though it starts as a complete statement with *you* as the subject, after which the *you* is deleted by the imperative formation rule. Accordingly, the two sentences "You float like a butterfly" and "You sting like a bee" are transformed into imperatives.

- Float like a butterfly. Sting like a bee.

Other aspects of the imperative, such as the presence of *do* or a negative, are taken care of by other rules (see section 2.8).

Passive Formation

The passive rule interchanges the order of subject and object in simple sentences.

- Angus played the bagpipes soulfully. (active) ⧫
  The bagpipes were played soulfully by Angus. (passive)

When passive occurs, the person performing the action (agent) may be omitted (agent-deleted passive).

- The doctor completed the heart transplant. (active)
- The heart transplant was completed by the doctor. (full passive)
- The heart transplant was completed. (agent-deleted passive)

Conjunction, Disjunction and Alternation

So far, only simple sentences have been described. Compound and complex sentences are merely combinations of simple sentences and only a few more rules are needed.

A compound sentence consists of two or more sentences joined by the rules of conjunction, disjunction or alternation. These rules use the words *and, but,* and *or* respectively. Two or more noun phrases, verb phrases, prepositional phrases, adverbs or adjectives may also be joined by these words to make compound structures (see section 2.9).

- Fred and Sue were eating Cheezits and popcorn at the State Fair.
- Charlene wants to be a doctor or a car mechanic.
- Maude toadied up to her superiors and got the promotion.
- Lester was riding out of town and into the sunset when I last saw him.
- The act was done quickly but maliciously.
- The Chairman of the Board is no more unsympathetic or uncompromising than your father.

Comparative and Superlative Formation

When two things are compared, the comparison may be expressed in two separate sentences

- Fiction is strange. Truth is stranger.

or as a complex sentence

- Truth is stranger than fiction is.

or as a reduced complex sentence:

- Truth is stranger than fiction.

The superlative rule adds *-est* to the base forms of words (see section 2.10).

- Marvin is the strangest dancer I've ever seen.

Relative Clause Formation

The relative clause is a modification of a sentence by a transformational rule which replaces a noun phrase with a relative pronoun (*who(m), which, that*). Relative clauses are considered to be complex sentences because one sentence has been modified and inserted into another. The relative clause appears in the main sentence directly following the noun or noun phrase that it modifies (see section 2.11). Thus, the two sentences "The man wore nothing under his raincoat" and "The police arrested the man" become one by the relative clause rule.

- The man *whom the police arrested* wore nothing under his raincoat.

Complementation

Like relative clauses, complements are sentences which are embedded into main sentences. One major difference between the relative clause and the complement is that the former modifies a noun phrase in the main sentence, while the latter actually functions as a noun phrase itself. It can be the subject or object of the main sentence or the object of a prepositional phrase (see section 2.12).

- I wish *that I could find Krypton*.
- *To be a matador* was his fondest dream.
- She thought of *what her insurance agent had sold her*.

How to Use the Guidelines

In the following guidelines, whenever it is indicated that a structure may be used at a particular level, it may also be used at higher levels. If a structure is specified DO NOT USE, it should not be used until otherwise indicated; at Level 3, this means that it may not be used at any editing level because of its difficulty for hearing-impaired children. Additionally, some structures are designated as allowable only when graphics, illustrations or video supports meaning.

Determiners, Demonstratives and Adjectives

Determiners

The definite determiner *the*
The indefinite determiner *a* or *an*

Demonstratives

The singular demonstratives *this* and *that*
The plural demonstratives *these* and those

Adjectives

Quantifiers *many, some, each, every,* etc.
Numbers
General adjectives
Predicate adjectives

Overview

Determiners, demonstratives, and adjectives are grouped together because they all occur as part of a noun phrase. The phrase structure rule for noun phrases states that determiners and demonstratives may precede adjectives which may precede nouns. Possible combinations of the four elements are:

- Noun
  boys, horse
- Determiner + Noun
  the boys, a horse
- Determiner + Adjective + Noun
  the bad boys, a seeing-eye horse
- Determiner + Noun
  this footprint, that elephant
- Demonstrative + Adjective + Noun
  this large footprint, that gray elephant
- Adjective + Noun
  gray elephants

Determiners

There are two types of determiners: definite and indefinite. The definite determiner *the* is used with a noun whose referent is specific. The indefinite determiner *a* or *an* is used when the referent of the noun is not known, is one of a set, or has not been established previously in the conversation or paragraph.

Demonstratives

When demonstratives are used before a noun, they indicate whether the noun is physically near the speaker (*this, these*) or at a distance from the speaker (*that, those*).

- I'll eat *this* apple and you can have *that* one.

Demonstratives can also be used to emphasize a particular noun.

- I'll take *this* piece and leave you the rest.
- I don't think *that* sentence is grammatical.

Demonstratives may also occur without a following noun, as either subject or object in a sentence.

- I think I'll keep *these*.
- *That's* not true!

Adjectives

Adjectives occur before nouns, as well as alone as predicate adjectives. Generally, adjectives should be treated as vocabulary items and judged according to ranking on vocabulary lists. Quantifiers, however, deserve special consideration since they may be ambiguous, as in the following sentence:

- All the people spoke several languages.

This could be interpreted to mean that everyone spoke the same set of languages or that each person spoke a unique set of languages or that the sets of languages had some members in common.

The Development of Determiners, Demonstratives and Adjectives in Hearing and Deaf Children

Determiners

In young hearing children, use of the indefinite determiner *a* begins at the three-word stage. The definite determiner *the* begins at the four-word stage. No data is available on *an*, but because there is no meaning distinction between *a* and *an*, the absence of information on its acquisition is not critical.

Deaf children's problems using the determiners *a* and *the* are considerable. Like young hearing children, deaf children pass through a stage of using multiple determiners as in *a the car* and determiners with possessive adjectives (see section 2.5) as in *the my car*. Eventually, deaf children are taught that every noun must have a determiner in front of it unless a possessive adjective is used. This principle eliminates one problem (where to put the determiner) and creates another one (which determiner to use).

Analysis of determiner usage in written language samples shows that by age 10, deaf children put determiners in the proper place over 60% of the time. Of these, a full 25% were incorrect in terms of the definite/indefinite distinction; that is, one out of every four determiners used was an incorrect *the* for *a* or an incorrect *a* for *the*. These mistakes result in the stiltedness so characteristic of deaf children's written English. But it is important to recognize that this difficulty is a function of determiner usage, not of determiner comprehension. Misinterpretations of determiners should presumably affect the comprehension of a single sentence only minimally.

However, sentences rarely occur in isolation. Determiner interpretation may be crucial in comprehending connected discourse. Consider the sentences below:

- Colonel Sanders was baking chicken. His wife dropped a bottle of paprika into the deep fryer. *The* man rushed over to help.

The determiner *the* tells us that the man in question is Colonel Sanders. If the words read *a man*, then he must be someone other than Colonel Sanders. Deaf readers may not understand such fine differences between *the* and *a*.

Demonstratives

The demonstratives *this* and *that* occur early in the language development of young hearing children, appearing at the two-word stage. We know of no data on the acquisition of *these* and *those* by young hearing children, or of demonstratives in general by deaf children.

Adjectives

In young hearing children, adjectives may occur at the one-word stage. They generally refer to changes in people or objects which the child perceives in his/her environment, including such common ones as *hot*, *dirty* and *broken*. At the two-word stage, both adjectives and nouns may be used to modify a noun. Thus, in addition to *big ball*, the child may use *animal book* and *cat house*, where *animal* and *cat* are nouns which modify the following noun. Size adjectives are acquired earlier than shape, color, or descriptive adjectives. Finally, determiner plus noun or adjective plus noun occur earlier than the combination determiner plus adjective plus noun.

The only information available for the development of adjectives in deaf children concerns their comprehension of quantifiers. They understand *some*, *many*, *no* and *all* before *any* and *each*. *Every* is the most difficult.

Information on the Development of Determiners, Demonstratives and Adjectives

For hearing children:
Bloom (1970)
Bloom, Lightbown, and Hood (1975)
Brown (1973)
Maratsos (1974)

For deaf children:
Wilbur (1977)
Wilbur, Goodhart, and Montandon (1980)

	Determiners	Demonstratives	Adjectives*
Level 1	May use: *the* *a* *an*	May use when followed by a noun: *this, these* *that, those* • I want *that* book. • *Those* balls are mine.	May use only one adjective per noun, but may use a possessive adjective with an adjective. • I like her new dress. May use numbers. • I want *one* cookie. May use the following quantifiers before a noun: *a lot of* *all* *lots of* *many* *no* *some* May use possessive adjectives (see section 2.5). May use predicate adjectives. • The car is *red*.
Level 2		May use without a following noun if referent is illustrated: *this* *these* *those* • *This* is my math teacher. May use without restriction: *that* • *That* is very funny.	May use two adjectives per noun. • We met the *tall, blond* man. May use the quantifiers: *any* (see section 2.6) *another* *both* *too much* • You eat *too much* candy. May use pronouns as adjectives. • *You* kids are bad.
Level 3		May use without restriction: *this* *these* *those*	May use: *each* • *Each* child sang a different song. May use only in time expressions: *every* • They saw each other *every* day.

*Adjective difficulty is determined more by meaning than by function in a sentence. Consult the Vocabulary chapter, page 1, for a discussion of word choice in language editing.

Verbs and Auxiliaries

Tense

Past
Present

Modals

Auxiliaries (helping verbs)
Special modal terms

Verb Aspects

Perfective
Progressive
Passive

Elliptical Verb Phrases

Overview

Verbs in English consist of an optional auxiliary portion and an obligatory main verb. Tense, which is obligatory, marks the first word in the auxiliary portion. It expresses distinctions of time. If there is no auxiliary, tense marks the main verb. The complexity or simplicity of the verb depends on the complexity of the auxiliary portion. If there is an auxiliary, it includes tense and any combination of the following optional components:

Modal
Perfective aspect
Progressive aspect
Passive aspect

The sentences below show the range of complexity of verb forms.

- Fiona *dealt* another hand.
  (past tense and main verb only)
- Fiona *has dealt* another hand.
  (present tense, perfective aspect, main verb)
- Fiona *was dealing* another hand.
  (past tense, progressive aspect, main verb)
- Fiona *has been dealing* another hand.
  (present tense, perfective aspect, progressive aspect, main verb)
- Fiona *will have been dealing* another hand.
  (present tense, modal, perfective aspect, progressive aspect, main verb)
- Another hand *will have been dealt* by Fiona.
  (present tense, modal, perfective aspect, passive aspect, main verb)

The verbs *be* and *have* are unique in that they may be main verbs in some cases and auxiliaries in others. They function as auxiliaries to show verb aspects.

Tense

There are two tenses in English, present and past. Future time is expressed by the present tense coupled with the modal *will*. The present tense usually has no marker, except for the third person singular (*he, she, it*) form which ends in *-s*. The past tense is marked by the addition of *-ed*, except for the irregular verbs.

Modals

Modals can be separated into two groups: those which are generally thought of as helping verbs and those which are special constructions.

The helping modals are:

can	*could*
may	*might*
will	*would*
shall	*should*
must	

The special modals are:

have to	*used to*
going to	*had better*
need to	*had best*
ought to	*be...to (be able to, be about to)*

Verb Aspects

The dictionary defines aspect as "the nature of the action of a verb as to its beginning, duration, completion or repetition and without reference to its position in time." There are three verb aspects in English: the perfective, the progressive and the passive; these may occur in past or present tense. The perfective indicates a completed action. The progressive indicates a continuing or repeated activity. The passive indicates that the usual sequence of subject-verb-object has been reversed.

The perfective is a form of the verb *have* (have, has, had) followed by the past participle of the main verb. This past participle may have the same form as the past irregular main verb (*has cut*), be marked by *-ed (has remembered)* or by *-en (has eaten)*.

- She *had finished* her malted when the director walked over.
- That problem *has arisen* before.

The progressive is a form of the verb *be* followed by the present participle *-ing* of the main verb.

- The British *are coming*.
- The hyenas *were laughing* all night.

The passive is a form of the verb *be* (or *get*) followed by the past participle of the main verb. When the agent (performer of the action) is present, it is preceded by *by*. When the agent is missing, the passive is called *agent-deleted*.

- John *was arrested* by the vice squad.
- Mary *was* also *arrested*.
- John *got arrested*.

Elliptical Verb Phrases

In connected discourse, parts of the verb phrase are frequently deleted when they are identical to preceding verb phrases. The following is an example:

- Who is guarding the cookie jar? *Ted is*.

In the second sentence, the underlying portion "guarding the cookie jar" has been deleted. In sentences with complex auxiliaries, the speaker may delete everything but the first word, or include more of the auxiliary component.

- Sludge must have been cutting his losses and Silverman *must (have) (been)* too.

The Development of Verbal Auxiliaries in Hearing and Deaf Children

Tense

In young hearing children, the development of tense follows a predictable trend. The earliest learned forms are the irregulars, such as *broke, saw, came* and *went*. When the regular past tense *-ed* is learned, children often overgeneralize its use to the previously correct irregular forms, creating *goed, camed, sawed,* and even *wented*. This suggests that their earlier use of irregular forms occurred without a complete understanding of the function of past tense. Eventually, the irregular verbs are restored to their correct forms. At about this time, the third person singular marker *-s* for present tense appears *(comes, sings, talks)*. As noted earlier, the marking for future is the modal *will*. Young hearing children acquire the modal *will* along with the other modals.

The literature on deaf children's acquisition of tense is scanty. What is available indicates that the simple past tense is mastered before future time as shown by *will*.

Modals

Young hearing children first use the negative modals *can't, don't* and *won't*. The positive forms *can, do* and *will* are not used until later, suggesting that early modal usage, like early usage of irregular verb forms, is not accompanied by complete understanding of the function of the structure.

The results of research conducted by The Caption Center indicate that the first modal deaf children understand in reading is *will*. *Would* and *might* are understood next, and finally, *can* and *could*. *Should* and *won't* are very difficult to understand, even for good deaf readers. There is also considerable confusion between *be* and *have* when they function as auxiliaries, but this is primarily in production and should not affect comprehension.

There is almost no information about the development of special modals for either deaf or hearing children. We know only that *have to* is especially difficult for deaf children and therefore is not allowed at any editing level.

Verb Aspects

The progressive marker *-ing* is probably the earliest learned verb marking (even before tense), although when hearing children first produce it, they tend to omit the appropriate accompanying form of the verb *be*. For example, use of the progressive in questions is common, as in *what doing?* and *where going?* At about the same time that the regular past tense appears, the verb *be* begins to be used correctly with progressive verb forms. A relatively late development is the mastery of the perfective and passive forms.

Research indicates that deaf children learn progressives before perfectives, and perfectives before passives. Passives are so difficult that even 18-year-old deaf adolescents have considerable trouble understanding them.

Elliptical Verb Phrases

We know of no research into hearing or deaf children's acquisition of elliptical statements. However, deaf children reading at the third grade level have been shown to understand elliptical questions.

Information on the Development of the Verbal Auxiliaries

For hearing children:
Allen (1971)
Brown (1973)
DeVilliers and DeVilliers (1973)
Trantham and Pedersen (1976)

For deaf children:
Quigley, Montanelli, and Wilbur (1976)
Power and Quigley (1973)
Wilbur, Goodhart, and Montandon (1980)

	Tense	Modals	Perfective Aspect
Level 1	May use simple past, present and future.	May use: *can** *may** *do, does, did,* *will* May use special forms *want to* and *try to* (see section 2.12).	
Level 2		May use: *would* *might* *must* May use the special forms *going to* and *need to*. • I am *going to run* in the race next week. May use elliptical constructions. • Who is staying home? I am.	
Level 3		May use: *should* *could* *be able to* *used to* Do not use: *ought to* *be about to* *had better* *had best* *have to* *be unable to* *shall* *supposed to* • You'*d better* be home at 5:00.	May use past and present. • John *has arrived*. • Mary *had* already *left*. May use with a modal. • *The* defendant *shouldn't have lied*. Do not use future. • Jon *will have completed* his homework by game time.

*As indicated before, these modals are very difficult for beginning readers. They are allowed at Level 1 only because they are needed to express basic meanings.

Progressive Aspect	Contractions	Passive Aspect
May use past and present. • John *is sleeping*. • Mary *was hiding*.	May use: *can't* *don't* *isn't* *doesn't* *didn't*	
	May use: *wouldn't* May contract pronouns with auxiliaries: *I'm* *he's* *they're* *you'll* *we'll*	
May use with a modal or perfective aspect. • Fred *might be sleeping*. • She *has been working*. Do not use modal and perfective with progressive. • We *could have been helping* you since Friday.	May use: *won't* *couldn't* *shouldn't* May contract perfective with negatives. • We *haven't discussed* it. Do not use pronoun contracted with *would:* *I'd* *he'd* Do not use contractions of pronouns and perfectives. • I know I'*ve seen* that face before. • She'*s been* in trouble with the police too often.	Do not use at any level.

2.3

Adverbs, Adverbial Clauses and Adverbial Complements

Adverbs

Manner
Location
Time
Frequency
Degree

Adverbial Clauses

Because clauses
Temporal sequencing
Conditional clauses (*if...then*)

Adverbial Complements

Adverbs

Adverbs belong to the verb phrase. Their function is to modify the main verb by answering the questions how, when, or where. However, they do not have to appear near the main verb; instead, they may occur at the beginning, in the middle, or at the end of a sentence. Some adverb types are:

- Manner
  carefully, slowly, fast
- Location
  here, there, behind, inside, outside
- Time
  tomorrow, yesterday, today, first, after, before
- Frequency
  sometimes, always, again, never (see section 2.6), *hardly*
- Degree
  somewhat, very, so, too, quite, really

Adverbial Clauses

A clause contains at least one noun phrase and one verb phrase. An adverbial clause begins with an adverb and is embedded in another sentence; thus, a sentence containing an adverbial clause is considered to be a complex sentence. The adverbial clause modifies the main verb of the main sentence. There are many kinds of adverbial clauses. Streng categorizes them into nine types, introduced by over 40 different words (Streng, 1972). The following is a non-exhaustive listing of clause types.

Because Clauses

- Dry Gulch is in an uproar *because* the Cisco Kid's in town.
- He isn't going *so* we can't go either.

Temporal Clauses

- She bought the insurance policy *before* she boarded the plane.
- *After* you finish your work, come to Bermuda.
- Martha will practice her song *until* she memorizes all the music.

Conditional Clauses

- *If* Roger stops weight-lifting, *then* his muscles will turn to jelly.

Adverbial Complements

Adverbial complements are constructed of three parts:

1. an intensifier (*so, too, such, enough*)
2. an adjective, adverb or noun
3. a verbal complement beginning with *that*, or an infinitive complement (see section 2.12).

Adverbial complements actually modify the adjective or adverb rather than the main verb.

- Bruce was *so* ingratiating *that* Ms. Lubinsky became suspicious.
- Bertha was *so* relieved *to* be back in her stall.
- His enthusiasm is *too* overwhelming *to* be genuine.
- They've never had *enough* money *to* build their dream house.

The Development of Adverbs, Adverbial Clauses and Adverbial Complements in Hearing and Deaf Children

Adverbs

The available information on the acquisition of adverbs in either deaf or hearing children is extremely limited. It appears as though adverbs are acquired as vocabulary items rather than as a group. However, some generalizations can be made. The earliest learned adverbs are those of location, followed by time and manner, then by frequency, and finally by degree. Adverbs are acquired first at the end of a sentence. The sequences of acquisition are:

Type:	Position:
1. location	**1.** final position
2. time and manner	**2.** inital and medial positions
3. frequency	
4. degree	

Adverbial Clauses

Caption Center research shows that deaf children understand conditional sentences by the time they read at a third grade level. They also comprehend sentences with adverbial clauses introduced by *until* at this time. The only other kind of adverbial clause that has been studied specifically with deaf children is the temporal sequencing which can be introduced by *before* and *after*. The data indicate that sentences containing *before* and *after* clauses are better understood by deaf students when the order of the clauses matches the order of events in the real world. The sentence "John ate breakfast before he went to school" presents two clauses in the actual order of occurrence of the two events. Contrast this with "Before he went to school, John ate breakfast." In these sentences, the two events are the same, the two clauses are the same, but in the second sentence, the order of presentation is different from the order of events in real life. At Level 3, when adverbial clauses are permitted, they should be in the temporal order that matches the actual occurrence of events.

Adverbial Complements

We know of no data on the development of adverbial complements in hearing children. The only research on deaf children's acquisition of this structure is the Caption Center's investigation of *enough...to*. By the time hearing-impaired children read at a third grade level, they have a good grasp of this construction.

Information on the Development of Adverbs, Adverbial Clauses and Adverbial Complements

For hearing children:
Bloom, Lightbown, and Hood (1975)
Brown (1973)
Clark (1973)

For deaf children:
Jarvella and Lubinsky (1975)
Wilbur, Goodhart, and Montandon (1980)

	Adverbs*		Adverbial Clauses
Level 1	In general, may use one adverb in final position only. But may use the following adverbs in initial *or* final position: *maybe* *please* *then* *today* *tomorrow* *yesterday* • *Then* we can play.	May use only if illustrated: *here* *there* Do not use an adverb if the sentence already has a prepositional phrase.	
Level 2	May use in any position: final, medial, and initial. May have two or more adverbs in the same sentence. • They came to the meeting *late again*. • My cousins *still* play *together often*.		May use *if...then* conditional sentences with or without *then*. • *If* it rains tomorrow, [*then*] we won't have a picnic. • I'll decide *if* I want to go. May use adverbial clauses introduced by: *because* *until* • Doris waited *until* the bus came. • Kathy is sad *because* her dog ran away.
Level 3	May use: *anymore* *anyway* *even* *finally* *just* *probably* *usually* *yet*		May use the following adverbs to introduce adverbial clauses: *after* *before* *so* *so that* *when* *while* • Ralph parked the car *before* he robbed the bank. • Irma needed money *so* she went to the bank. • Todd is saving money *so that* he can take the trip. • *When* Maria is ready, she will call us. • Jeff left the room *while* we were arguing.

*Adverbs not listed at any of the levels should be treated simply as vocabulary items.

May use:

enough…to
so…that
so…to

- Susan is strong *enough to* carry the box.
- She was *so* hungry *that* she ate everything in sight.
- We are *so* happy *to* see you.

Do not use reverse-order temporal constructions; that is, where the order of events in the sentences is not chronological.

- Ralph robbed the bank *after* he parked the car.
- *Before* he robbed the bank, Ralph parked the car.

Do not use:

although
as though
in order that
in that
now that
provided that
unless
whenever

Do not use *since* when it means *because*.

- *Since* you broke the law, you'll have to pay the fine.

Do not use:

too…(for)…to

- The apple was *too* sour (for us) *to* eat.

2.4

Prepositions, Particles and Prepositional Adverbs

Prepositional Phrases
In the verb phrase
In the noun phrase

Particles
Particle movement

Prepositional Adverbs
Prepositions which function as adverbs

Prepositional Phrases

Prepositional phrases are constructed of prepositions followed by noun phrases. Prepositional phrases which occur as part of the verb phrase may describe location, manner, time, and other functions similar to adverbs (see section 2.3). Prepositional phrases which occur as part of the noun phrase are usually partitive, that is, they usually begin with *of*.

- The piece *of glass* cut his finger.

Prepositions are used to mark indirect objects in English, which occur after the direct object. The rule of dative movement moves the indirect object to the left of the direct object and eliminates the preposition.

- Charles slipped a fiver to the headwaiter.

After dative movement we have

- Charles slipped the headwaiter a fiver.

Particles

Particles may look exactly like prepositions, and may even have a noun phrase following. But particles function as part of the verb; in fact, they are often referred to as *double verbs*. Particles can be distinguished from prepositions by use of the particle movement test:

If a preposition/particle can be separated from the verb and moved after the noun phrase, then it is a particle.

- Mary looked *up* the number in the phone book.
- Mary looked the number *up* in the phone book.

If such movement results in an ungrammatical sentence, then it is a preposition.

- John ran *up* a big hill.
- * John ran a big hill *up*.

Particle movement is required when a pronoun replaces the noun phrase. Compare:

- Mary took *off* her shoes.
- Mary took her shoes *off*.
- * Mary took *off* them.
- Mary took them *off*.

Prepositional Adverbs

Prepositional adverbs may look exactly like prepositions, but unlike prepositions and particles, they do not have noun phrases after them. In fact, they are prepositions without following noun phrases, and therefore seem to be functioning as adverbs.

- Helen walked *around the room*.
- Helen walked *around*.

In the first sentence, *around* could be called a preposition because it introduces a prepositional phrase, while in the second sentence, it could be called an adverb because it modifies the verb. The term *prepositional adverb* represents a compromise.

A partial list includes:

about	*besides*	*outside*
above	*between*	*past*
across	*by*	*since*
after	*down*	*through*
along	*in*	*under*
apart	*inside*	*underneath*
around	*near*	*up*
before	*off*	*within*
behind	*on*	*without*
below	*over*	

* Denotes ungrammatical construction.

The Development of Prepositions, Particles and Prepositional Adverbs in Hearing and Deaf Children

It is not possible to separate the information on the development of prepositions from the information on the development of particles and prepositional adverbs.

Early use of prepositions by hearing children is related to their use of words expressing location, such as *here* and *there*. At first, prepositions are not used as part of noun phrases, but rather as prepositional adverbs, in such forms as *go away*, *sit down*, and *come back*.

Later developments include the combination of one locational word with another, as in *out here*, *in here*, and *over there*. At the same time, the preposition *in* begins to occur with a following noun.

When particles occur, at first there is no particle movement. In fact, particle movement is not observed until after several other prepositions, notably *on* and *under*, are used appropriately with following nouns.

Subsequent developments include the expansion of usage to other prepositions, such as *with*, *from*, and *to*, and finally to prepositional phrases which occur within other noun phrases, such as *the man from New York* and *a bowl of apples*.

Not as much information is available for deaf children. What is known is that they seem to have two major problem areas:

1. *Omission of required prepositions*. The most frequently deleted prepositions are those which are syntactically required but which are semantically unnecessary.

- Tomorrow I go school.

Deaf children are apparently concerned with the meaning rather than the syntactic structure.

2. *Confusion of the semantic function of various prepositions*. In their early preposition usage, deaf chidren make numerous substitutions of one preposition for another, particularly *at* for *in* and, to a lesser degree, *in* for *at*. The prepositions which are used correctly earliest are the locatives (similar to hearing children) and the manner prepositions (*with*, *about*, *for*).

The results of Caption Center research into certain specific prepositions indicate that deaf children comprehend *for* and *about* in reading before they understand *until* and *from*. *By* and *of* are especially difficult for them.

Information on
the Development
of Prepositions,
Particles and
Prepositional Adverbs

For hearing children:
Bloom, Lightbown, and Hood (1975)
Brown (1973)
Clark (1973)

For deaf children:
Charrow (1974)
Kluwin (1978)
Taylor (1969)
Wilbur, Goodhart and Montandon (1980)

	Prepositions*	Particles	Prepositional Adverbs
Level 1	May use one prepositional phrase in the verb phrase. • John put the book *on the table*. May use: *about* *on* *at* *out* *down* *over* *for* *to* *in* *under* *into* *up* *near* *with* *off* May use dative movement. • I gave the book *to Mary*. ⇒ I gave *Mary* the book.		May use one prepositional adverb at the end of a sentence only if it is illustrated. The following words are allowed: *away* *off* *down* *on* *in* *outside* *inside* *up* • Billy fell *off*. • Come *on*. • Sit *down*. • Go *away*.
Level 2	May use two prepositional phrases in the verb phrase. • Billy walked *across the street with the bicycle*. May use: *above* *during* *across* *from* *after* *in back of* *against* *in front of* *around* *inside* *before* *outside* *behind* *outside of* *below* *through* *beside* *until* *between* *without* May use an *of* prepositional phrase in the noun phrase. • Five *of the boys* left the room.	May use without particle movement. • Put *away* the book. • John looked *up* the telephone number.	May use these words without restriction: *away* *off* *down* *on* *in* *outside* *inside* *up*
Level 3	May have a prepositional phrase in the noun phrase. • People *from our town* fought in World War II. May use: *along* *instead of* *among* *of* *beneath* *opposite* *beyond* *since* *by* *toward* *except*	May use particle movement. • Put the book *away*. • Put it *away*.	May use any prepositional adverb according to the vocabulary guidelines for this level.

*Prepositions not listed at any of the levels should be treated simply as vocabulary items.

Pronouns

Personal Pronouns
Possessive Adjectives
Possessive Pronouns
Reflexive Pronouns
Indefinite Pronouns
Reciprocal Pronouns
There-insertion

Overview

Pronouns are used in place of entire noun phrases. Therefore, it is not possible for determiners or adjectives to modify a pronoun.

- The I
- A big yours

This section deals with five kinds of pronouns, possessive adjectives, and the transformational rule of there-insertion. (The relative pronouns *who, which,* and *whom,* which introduce relative clauses, are discussed in section 2.11.)

Personal Pronouns

Personal pronouns substitute for noun phrases which are subjects or objects.

Subject	Singular	Plural
First person	*I*	*we*
Second person	*you*	*you*
Third person	*he, she, it*	*they*

Object	Singular	Plural
First person	*me*	*us*
Second person	*you*	*you*
Third person	*him, her, it*	*them*

The neuter pronoun *it* is sometimes used merely as a subject place holder.

- *It* is easy to please John.
- *It* is November 6.
- *It* is cloudy.

In these cases, *it* has no noun referent and is sometimes called "dummy" *it*.

Possessive Adjectives

Possessive adjectives, unlike pronoun forms, do not replace an entire noun phrase. Instead, they are substitutes for a possessive noun which modifies another noun; e.g., John's book.

	Singular	Plural
First person	*my*	*our*
Second person	*your*	*your*
Third person	*his, her, its*	*their*

Possessive Pronouns

A second kind of possessive, the possessive pronoun, is used to replace both the possessive noun or possessive adjective and the noun it modifies.

- That's Sally's yacht.
- That's *her* yacht. ⇒ That's *hers*.

	Singular	Plural
First person	*mine*	*ours*
Second person	*yours*	*yours*
Third person	*his, hers, its*	*theirs*

Reflexive Pronouns

Reflexive pronouns are complex pronouns composed of a possessive adjective and the word *self* (or *selves*). The exceptions to this are *himself* and *themselves*, which use the personal object pronoun rather than the possessive adjective.

	Singular	Plural
First person	*myself*	*ourselves*
Second person	*yourself*	*yourselves*
Third person	*himself*	*themselves*
	herself	
	itself	

Indefinite Pronouns

Indefinite pronouns are also complex pronouns, composed of the quantifiers (see Adjectives, section 2.1) *every*, *any*, *some*, *no* and the nouns *body*, *one* or *thing*. They function in contexts where specific persons are unknown or when generalizations about groups of people or things are made.

	body	one	thing
every	*everybody*	*everyone*	*everything*
any	*anybody*	*anyone*	*anything*
some	*somebody*	*someone*	*something*
no	*nobody*	*no one*	*nothing*

Reciprocal Pronouns

The reciprocal pronouns *each other* and *one another* express a mutual exchange of action or emotion between two people, groups, or things.

- They're crazy about *each other*.
- Help *one another*.

There-insertion

A transformational rule in English operates on certain sentences with *be* verbs which have indefinite subjects. This rule moves the indefinite subject to the right of the verb and inserts *there* in its original place. The second sentence below is derived from the first by there-insertion.

- A fly is in my soup.

  There is a fly in my soup.

In the second sentence, *there* does not have a locative meaning; i.e., it is not used to point out the fly. Rather, it merely acts as a place holder for the moved subject, *a fly*. In this sense, it is similar to the dummy *it*.

Notice that if the subject is modified by a definite determiner or if the verb is not *be*, there-insertion cannot apply.

- The new day is dawning.
- ⁎There is the new day dawning.
- Some idiot forgot to put the ice cream in the freezer.
- ⁎There forgot some idiot to put the ice cream in the freezer.

Notice also that there are some sentences which can occur only with there-insertion; there is no simpler form which expresses the meaning grammatically. The sentence "There was a riot in Grosse Pointe last night" cannot be expressed without there-insertion.

- ⁎A riot was in Grosse Pointe last night.

⁎ Denotes ungrammatical construction.

The Development of Pronouns in Hearing and Deaf Children

Personal Pronouns

Research on the acquisition of personal pronouns by young hearing children indicates that they begin by distinguishing between the speaker (first person) and the addressee (second person) before they learn to distinguish the third person. Also, pronouns which do not require gender marking (*I, it, you*) are learned before pronouns which do require gender marking (*he, she*). Singular pronouns are learned before plural pronouns.

The research on pronouns contained in the TSA indicates that 10- to 18-year-old deaf students have a similar but not identical pattern of acquisition of pronouns to that for hearing children. Singular pronouns are all easier than plural pronouns. In general, personal pronouns are acquired before possessive adjectives, possessive pronouns, or reflexive pronouns. Unlike the hearing children, however, the deaf children differed in the order of difficulty of first, second, and third person: first person was easier than third person, which was in turn easier than second person.

Order of Acquisition	Hearing	Deaf
Gender	without marking	no data
	with marking	
Number	singular	singular
	plural	plural
Person	first	first
	second	third
	third	second

Possessive Adjectives, Possessive Pronouns and Reflexive Pronouns

These pronoun forms are grouped together because they have only been investigated relative to each other. For both deaf and hearing children, possessive adjectives are acquired before possessive pronouns, which are acquired before reflexive pronouns.

Order of Pronoun Acquisition:

1. personal pronouns
2. possesive adjectives
3. possessive pronouns
4. reflexive pronouns

Indefinite Pronouns

By the time deaf children read at about the third grade level, they understand the indefinite pronouns composed of the quantifiers *no, any, every, some* in various combinations with the nouns *body, one* and *thing*.

Reciprocal Pronouns

Each other is understood in print by deaf children at about the third grade reading level. There has been no research into comprehension of *one another*.

There-insertion

We know of no data concerning acquisition of there-insertion by either deaf or hearing children.

Information on the Development of Pronouns

For hearing children:
Chomsky, C. (1969)
Hatch (1969)
Huxley (1970)
Menyuk (1969)
Waryas (1973)
Wilbur, Quigley, and Montanelli (1975)

For deaf children:
Wilbur (1977)
Wilbur, Quigley, and Montanelli (1975)
Wilbur, Goodhart and Montandon (1980)

	Personal Pronouns	Possessive Adjectives	Possessive Pronouns
Level 1	May use without restriction: *I* *me* *you* May use only if referent is illustrated: *he* *her* *him* *it* *she* *them* *they* *us* *we* May use dummy *it* for weather and time expressions. • *It* is raining. • *It* is morning.	May use without restriction: *my* *our* *your* May use only if referent is illustrated: *her* *his* *its* *their*	May use: *mine*
Level 2	May use Level 1 pronouns without restriction. *It* may be used when the referent is not specific. • *It* is hard to open this bottle.	May use without restriction.	
Level 3			May use: *hers* *his* *its* *ours* *theirs* *yours*

Reflexive Pronouns	Indefinite Pronouns	Reciprocal Pronouns	There-insertion
	May use: *anybody* *anyone* *anything* *everybody* *everyone* *everything* *nobody* *no one* *nothing* *somebody* *someone* *something*	May use: *each other*	May use there-insertion. • *There* is a bear in the park.
May use without restriction: *myself* May use if referent is illustrated: *herself* *himself* *itself* *ourselves* *themselves* *yourself* *yourselves*		Do not use: *one another*	

Negatives

Negative Adverbs
Negative Adjectives
Negative Pronouns
Negative Interjections
Negative Imperatives

Negative Adverbs

not *never*
not yet *no longer*

The simplest negative adverb is *not*; its placement, like that of *never* and *no longer*, varies according to the verb phrase structure of a sentence. If an auxiliary is present, *not* comes right after it.

- People in glass houses should *not* throw stones.
- Marion has *not* been wearing false eyelashes.

When the sentence to be negated does not have an auxiliary, a form of *do* is used instead. This is the rule of do-support (see page 13).

- Movie sequels earn as much as the originals. ◊
  Movie sequels *do not* earn as much as the originals.

Contraction of *not* into *n't* may occur with the auxiliary verb or a form of *do*. The words *will not* contract into *won't*.

- Ben *won't* pay the rent.

Sentences with *to be* as the main verb are exceptions to the negative placement rule. In these cases, the negative adverb is put after the main verb.

- John is *not* a disc jockey.

Placement of *not yet* may follow the pattern of the other negative adverbs or the phrase may be split up.

- Sally is *not yet* ready to abandon her career goals.
- Sally is *not* ready to abandon her career goals *yet*.

Negative Adjectives

no *neither*
any

Any, in its negative sense, must be used with the negative adverb *not*.

- We *don't* have *any* bananas.

The adjectives *no* and *neither* show negation by themselves.

- Yes, we have *no* bananas.
- *Neither* contestant won the trip to Hawaii.

Negative Pronouns

nobody *anybody*
nothing *anything*
no one *anyone*
none

In English it is not possible to have both a negative adverb and a negative pronoun in the same sentence. Either the negative pronoun (*nobody, nothing, no one, none*) is used, or the negative adverb *not* is used with a positive pronoun (*anybody, anything, anyone*).

- We saw *nobody* leave.
- We did not see *anybody* leave.

Negative Interjections

No!
Don't!

These words are used singly to express strong emotion.

Negative Imperatives

Don't
Do not

Since imperative sentences have no auxiliary verb, they are negated by the rule of do-support and the negative adverb *not* in contracted or uncontracted form.

- *Don't* tread on me.
- *Do not* read this sentence.

The Development of Negatives in Hearing and Deaf Children

The information on the development of negatives cannot be broken up neatly by negative type. What little information is available on hearing children indicates that acquisition of negatives involves both the proper placement of the negative in the sentence and mastery of the different meanings which negatives can have.

In young hearing children, there are several developmental stages in the use of negatives. *No* and *not*, the first negatives learned, are placed at the beginning of sentences.

- *No* want sleep.
- *Not* go sleep.

In the next stage, the two forms *can't* and *don't* are used, although no other modals are used. At the same time that *can't* and *don't* begin to occur, the forms *no* and *not* may be moved inside a sentence and placed before the verb.

- I *no* liked it.
- It *not* taste good.

Later developments include acquisition of negatives with other modals, negative adjectives, and finally negative indefinite pronouns (see section 2.5).

Early use of negatives in young hearing children performs several semantic functions. Negatives are acquired in the order presented here:

1. Negatives may be used to express *non-existence* when referring to objects or events which no longer exist.

- No more.
- All gone cookie.

2. Negatives may be used to *refuse* or reject an offer.

- No medicine.
- No beddy-bye now.

3. Negatives may also be used to *deny* a statement.

- No, I never said that.

Information on the development of negative structures in deaf children is sparse. There is some indication that they pass through stages similar to those of hearing children with respect to the placement of the negative at the beginning and inside the sentence. There are no comparable data on the semantic functions of negatives.

It is known that deaf children learn to use do-support, the rule which puts *do* into negative sentences which do not already have an auxiliary verb. And finally, we know that deaf children tend to overgeneralize contractions and mistakenly accept *willn't* and *amn't* for contractions of *will not* and *am not*.

Information on the Development of Negative Structures

For hearing children:
Bloom (1970)
Klima and Bellugi-Klima (1970)
Menyuk (1969)

For deaf children:
Quigley, Montanelli, and Wilbur (1974)
Wilbur, Goodhart and Montandon (1980)

	Negative Adverbs	Negative Adjectives
Level 1	May use *not*. • John is *not happy*. • John *cannot* swim. May use *not* in initial position. • *Not* me. • *Not* my mother. May use some contracted forms: *can't* *don't* *doesn't* *didn't* • John *can't* swim. • The girls *didn't* fall.	May use *no* in initial position. • *No* more crying. • *No* more money for bats. • *No* fighting.
Level 2	May use contracted form *n't* with all modals allowed at this level (see section 2.2).	No restrictions on use of *no* or *any*. • I saw *no* people in the room. • I didn't see *any* people in the room.
Level 3	May use: *never* *not yet* • John *never* forgets his homework. • Billy is *not* here *yet*. • Has Mary arrived? *Not yet*. Do not use *no longer*. • John is *no longer* here.	Do not use *neither*. • *Neither* of them arrived on time.

Negative Pronouns	Others
	May use negative interjection. • No! May use *don't* and *do not* as a negative imperative. • *Don't* hit the baby!
May use: *anybody* *anyone* *anything* *nobody* *no one* *nothing*	May use negative interjection. • *Don't!*
May use *none*. • None of us likes her.	Do not use negative complements. • Ed asked Shirley *not to sell the house yet*. (See section 2.12, page 51.)

2.7

Questions

Yes/No Questions
WH-questions
Elliptical Questions
Tag Questions
Indirect Questions

Overview

Questions can be used to gain information and they may also be used rhetorically. In general, texts edited according to the multi-level system should avoid rhetorical questions, since they rely heavily on inference for understanding (see Inference chapter).

There are a number of question forms in English, involving several transformational rules.

Yes/No Questions

Yes/No questions are those which may be answered with either *yes* or *no*. They are the simplest type of question. They involve at most two rules: subject-auxiliary inversion and do-support. The former is responsible for changing the order of the subject noun phrase and auxiliary verb of a statement to produce a question.

- The man can swim? ⧫
  Can the man swim?

Subject-auxiliary inversion is always applied in forming yes/no questions. In addition, when an auxiliary verb is not present, a form of the verb *do*, or do-support, is used. Tense is carried on the *do* word.

- John thinks that Sam stole the files. ⧫
  Does John think that Sam stole the files?

Do-support is also found in the construction of negatives (see section 2.6).

WH-questions

WH-questions begin with a WH-word:

how	*who*
what	*whom*
when	*whose*
where	*why*

Formation of WH-questions involves subject-auxiliary inversion, do-support when needed, and a rule which puts the WH-word at the beginning of the sentence.

- Mary is trying to learn knitting. ⧫
  What is Mary trying to learn?
- Sally went to the zoo. ⧫
  Where did Sally go?

When the main verb is *to be*, do-support is not needed.

- Samantha is at the store. ⧫
  Where is Samantha?

Elliptical Questions

Elliptical questions are those in which only part or all of the auxiliary verb appears (see section 2.2). The main verb is deleted.

- Muriel is swearing off that particular bad habit. *Are you?*
- His pet Schnauzer could have won first prize. *Could yours?*

The main verbs *swearing off* and *won* are understood but not explicitly stated.

Tag Questions

Tag questions are attached to the end of statements. They require subject-auxiliary inversion, do-support when needed, a rule which replaces nouns with pronouns (see section 2.5) and a special adjustment for negation. Tag questions are much more complex than might appear at first glance because of a unique feature: if the statement is positive, the tag is negative; if the statement is negative, the tag is positive.

- Mark is a lumberjack, *isn't he*?
- Mark isn't a lumberjack, *is he*?

Indirect Questions

When a question is embedded into another sentence, the result is an indirect question. Both yes/no questions and WH-questions can be embedded into statements; in these cases, subject-auxiliary inversion does not occur. When yes/no questions are embedded, they occur with *if* or *whether*.

- Can Susan swim? ⧫
  Mary asked *if*/*whether* Susan can swim.
- Where should they put these? ⧫
  They asked *where* they should put these.
- Who is running for president? ⧫
  He wonders *who* is running for president.

The Development of Questions in Hearing and Deaf Children

Yes/No Questions

Research on the development of yes/no questions in young hearing children has shown two distinct stages. At the first stage, the major indication of a yes/no question is a rising vocal intonation at the end of a sentence.

- See doggy?
- Have cookie?

There are no auxiliaries at this stage, and consequently no use of subject-auxiliary inversion or do-support. At the second stage, auxiliaries, do-support and subject-auxiliary inversion are used. The tenses may still be incorrect at this stage.

- Could we ate the ice cream?
- Did he killed the dragon?

The small body of data available on the development of yes/no questions in deaf children indicate that they learn to use subject-auxiliary inversion and do-support in yes/no questions before they use the same rules in WH-questions.

WH-questions

Young hearing children begin to use WH-questions in a very limited way. Their first WH-questions are likely to use *where* and *what*.

- *Where* cookie?
- *Where* Daddy going?
- *What* that?
- *What* you doing?

At the next stage of development *what* and *where* are generalized to verbs other than *doing* and *going*. Then, as auxiliary forms are acquired, an interesting split occurs. Children use subject-auxiliary inversion in yes/no questions but not in WH-questions. When subject-auxiliary inversion does finally appear in WH-questions, it occurs first in positive WH-questions and later in negative WH-questions. It seems as if additional complexities, such as the presence of a negative, affect the child's ability to use other transformational rules, such as subject-auxiliary inversion.

Like hearing children, deaf children appear to master subject-auxiliary inversion and do-support in yes/no questions before WH-questions. Also, individual WH-words are acquired at different times. *What*, *where*, and *who* are learned before *whom* and *why*, which in turn are learned before *how* and *when*.

Elliptical Questions

We know of no research into the development of elliptical questions in hearing children. Research with deaf children shows that when they can read at the third grade level, they understand elliptical questions in print.

Tag Questions

There is little information on tag questions for either deaf or hearing children. But obviously, hearing children do not learn tag questions until they have completely mastered yes/no questions, since they are a form of yes/no questions. In addition, they learn positive tags (attached to negative sentences) before they learn negative tags (attached to positive sentences).

For deaf children, the only information available indicates that tag questions are harder than yes/no questions and WH-questions. Details concerning positive and negative tags are not available.

Indirect Questions

We know of no data on the development of indirect questions in either hearing or deaf children. We have assumed that children would not be able to handle indirect questions until they had fully mastered the corresponding direct questions.

Information on
the Development
of Questions

For hearing children:
Bellugi (1971)
Brown (1968)
Brown and Hanlon (1970)
Ervin-Tripp (1968)
Klima and Bellugi-Klima (1966)

For deaf children:
Quigley, Smith and Wilbur (1974b)
Wilbur, Goodhart and Montandon (1980)

	Yes/No Questions	WH-questions	
Level 1	All questions must have a direct answer. May use subject-auxiliary inversion. • Is John Home? May use do-support. • *Do* you like ice cream?	May use *who* questions with or without subject-auxiliary inversion or do-support. • *Who* is in the kitchen? • *Who* is Kathy helping? • *Who* did you see? May use *what* questions with or without subject-auxiliary inversion or do-support. • *What* is under the table? • *What* is Don cooking? • *What* did they buy? May use *where* questions with or without subject-auxiliary inversion or do-support. • *Where* is my hat? • *Where* is Bill hiding? • *Where* did Linda find the ball?	May use *why* questions with or without do-support if answer begins with *because*. • *Why* is Sam crying? *Because* his dog ran away. • *Why* did the clock break? *Because* Sue dropped it. May use *how*, *which* and *what* questions when a noun follows the question word. • *How many* eggs does he have? • *Which girl* do you like best? • *What color* is the house? • *What time* is Bob's class? • *What kind* is it? Do not use *What kind of*. • *What kind of* dog is he?
Level 2		May use *when* questions. • *When* is the party? • *When* did Fred arrive? • *When* is Ellen leaving? May use *whose* in questions. • *Whose* coat is on the living room floor? May use *why* questions without restrictions. • *Why* were the teachers meeting? They wanted to talk about the new books.	May use *how much* and *how many* questions without a following noun. • *How much* did you make? May contract question words with the auxiliary. • *Who's* playing the piano? • *When's* the doctor going to Rome?
Level 3	May use negatives. • *Don't* you like vanilla ice cream?	May use negatives. • *What didn't* you like about the movie? • *Why didn't* she remind me? May use *what kind of* questions. • *What kind of* car did they buy? May use *how* and *which* without restrictions. • *How* is your arm? • *How* did the war begin? • *Which* do you prefer?	

Elliptical Questions	Tag Questions	Indirect Questions
May use positive elliptical questions. • Fred went to Florida. *Could we?*		
May use negative ellipticals. • Frank helped us. *Couldn't she?*	Do not use: • John is angry, *isn't he?*	May use: • John asked *where* Mary was. • John asked *if* Mary was home. (See section 2.12.) Do not use *whether*. • John asked *whether* Mary was home.

Imperatives

Simple Imperatives
Imperatives with *You*
Negative Imperatives
Indirect Imperatives

Overview

Theoretically, an imperative is formed by applying a transformation known as *imperative formation* (also called *you-deletion*) to a statement which contains *you* as the subject.

- You mop the floors. ⇒
  Mop the floors!
- You stop hitting your sister. ⇒
  Stop hitting your sister!

Simple Imperatives

In simple imperatives, the *you* is deleted.

- Go directly to jail; do not pass go.
- Rotate your tires.
- Get thee to a nunnery.

Imperatives with *You*

In some cases, the *you* is retained.

- *You* try!
- *You* take your hands off me, you brute!

Notice that the forms with *you* left in still have an imperative function. When *you* is retained, it adds emphasis to the command.

Negative Imperatives

Imperatives can also be negative. In nearly all cases, this is accomplished by inserting *don't* and deleting the subject *you*.

- *Don't* eat the daisies.
- *Don't* break my heart.

Indirect Imperatives

Embedded (indirect) imperatives usually occur after certain main verbs.

- Dick told us to go home.
- She commanded him to grow up.
- Myra ordered them to pipe down.

The Development of Imperatives in Hearing and Deaf Children

We know of no information on the development of imperatives in either hearing or deaf children. Imperatives are such an early acquisition by both groups that texts on language development such as Streng (1972) and Hsu (1976) do not even mention them.

Indirect imperatives have been assumed to be acquired at the same time as similar infinitive complements (see section 2.12).

	Imperatives	Negative Imperatives	Indirect Imperatives
Level 1	May use without *you*. •Come! Read your book!	May use: •*Don't* hit the baby! (See section 2.6.)	
Level 2	May use with *you* as subject. •*You* go home right away!		
Level 3			May use: •John said *to go home*. May use with *no* phrase. •I told Betty *no fighting*. Do not use negative indirect imperatives. •John said *not to touch that*. (See section 2.12, page 51.)

Conjunction, Disjunction and Alternation

Conjunction *(and)*
Disjunction *(but)*
Alternation *(or)*

Overview

Compound structures are formed by joining two simple structures with *and*, *but*, or *or*. The structures can be sentences, noun phrases, verb phrases, adjectives, adverbs or prepositional phrases.

In transformational grammar, it is assumed that all compound structures begin as compound sentences; that is, it is assumed that compound noun phrases, compound verb phrases, compound adjectives, compound adverbs and compound prepositional phrases are reduced forms of compound sentences. For example, the sentences "John washed the car" and "John waxed the car" can be combined into a compound sentence with the help of pronouns.

- John washed the car *and* he waxed it.

A reduced version of this sentence is

- John washed the car *and* waxed it.

It has a compound verb phrase composed of the two verb phrases *washed the car* and *waxed it*. Another version is

- John washed *and* waxed the car.

It contains the compound verb *washed and waxed*.

Another example illustrates how compound noun phrases would result from compound sentences. The sentences "John went to the store" and "Mary went to the store" combine with *or* to give

- John went to the store or Mary went to the store.

They can further reduce to

- John or Mary went to the store.

Within this conception of compound structures, conjoined sentences are assumed to be simpler than other conjoined structures, such as conjoined verb phrases. But it is important to note that this is partly, but not completely, supported by research data on development.

Conjunction

Conjunction uses *and* to join elements.

Conjoined sentences

- Sam started the project *and* Sue finished it.

Conjoined noun phrases (subject position)

- Verna *and* Roy wallowed in self-pity.

Conjoined noun phrases (object position)

- Diana is seeking fame *and* fortune.

Conjoined verb phrases

- Ramona choked back her tears *and* smiled.

Conjoined verbs

- They kissed *and* made up.

Conjoined adjectives

- Simone is devious *and* alluring.

Conjoined adverbs

- He types quickly *and* accurately.

Conjoined prepositional phrases

- After her divorce he was out of the frying pan *and* into the fire.

Disjunction

Disjunction uses *but* to join elements.

Disjoined sentences

- Sigmund accepted the stranger's offer *but* George wasn't so stupid.

Disjoined verb phrases

- Liz inherited a small fortune *but* still lived at the Y.

Disjoined verbs

- Mona hated *but* tolerated Victor's peculiar mannerisms.

Disjoined adjectives

- Kurt is good-looking *but* unemployed.

Disjoined adverbs

- Ms. Trumble leapt about the room histrionically *but* gracelessly.

Disjoined prepositional phrases

- It's in the closet *but* behind the steamer trunk.

Alternation

Alternation uses *or* to join elements.

Alternating sentences

- Put down your gun *or* I'll shoot.

Alternating noun phrases

- Maggie *or* Miles will pick you up at the airport.

Alternating verb phrases

- Marion will march with the leftists *or* write impassioned editorials.

Alternating verbs

- Should I wash *or* dry clean this sleeping bag?

Alternating adjectives

- To do that, you'd have to be very brave *or* exceptionally naive.

Alternating adverbs

- Was that done accidentally *or* purposely?

Alternating prepositional phrases

- Apply mayonnaise to the bottom slice of bread *or* on top of the lettuce leaves.

Either...or

- The winner receives *either* a trip to the Riviera *or* a new boat.

...or not?

- Will Stella win back Howard's love, *or not?*

The Development of Conjunction, Disjunction and Alternation in Hearing and Deaf Children

Conjunction

At the very earliest stages of language development, young hearing children indicate conjunction simply by juxtaposing two nouns.

- fork spoon

Later, *and* is used, often in longer strings.

- fork *and* spoon *and* knife

At this early stage, conjoined adjectives or prepositions are common.

- up *and* down
- in *and* out

As simple sentence structure develops, so does conjoined structure. Conjoined sentences are learned early, as are conjoined noun phrases. Conjoined verb phrases follow. Finally, conjoined adjectives, conjoined adverbs and conjoined prepositional phrases are mastered.

Order of Acquisition
for Hearing Children:

1. conjoined sentences and noun phrases
2. conjoined verb phrases
3. conjoined adjectives, adverbs and prepositions

The data on deaf students indicate that, as with hearing children, conjoined noun phrases are learned reasonably early. Conjoined verb phrases, conjoined adjectives, conjoined adverbs and conjoined prepositional phrases come later, again following the normal pattern of acquisition.

Conjoined sentences present a special problem. Many conjoined sentences are easy for deaf children, as they are for hearing children. However, in language production when two sentences are conjoined, and the second sentence contains a noun phrase which is also in the first sentence, deaf students often incorrectly omit the noun phrase from the second sentence, sometimes leading to a different meaning. The sentences "The boy kicked the dog" and "The dog ran away" should be conjoined to

- The boy kicked the dog *and* it ran away.

Deaf students, however, may produce

- The boy kicked the dog *and* ran away.

which means something different.

Similarly, when reading sentences with conjoined verb phrases, deaf children are likely to impose a subject-verb-object word order where it does not exist. Therefore, a deaf reader might think that

- John kissed Mary and ran home.

means that Mary ran home. Of course, this misinterpretation is less likely to occur when it is semantically improbable, as in

- John waxed the car and ran home.

Disjunction

Hearing children learn *but* after they have mastered *and* and *or*. This is primarily because the function of *but* is to connect two phrases which express conflicting information.

Deaf children, on the other hand, appear to learn *but* before they master *or*.

Alternation

As mentioned earlier, young hearing children acquire *and*, *or*, and then *but*. The use of *or* develops conversationally in connection with questions.

- Which do you want, salt *or* pepper?

Later, *or* is used with sentences.

- Give me your money *or* I'll shoot.

Finally, *or* is used with *either*.

- *Either* John *or* Bill will win.

For deaf children, alternation is very difficult. This may be due to the fact that they do not often get the opportunity to participate in the types of conversations which lead hearing children to its early acquisition. The primary mistake deaf children make is to interpret *or* as its opposite *and*.

Information on
the Development of
Conjunction, Disjunction
and Alternation

For hearing chilren:
Bloom (1970)
Menyuk (1963, 1964)
Trantham and Pedersen (1976)

For deaf children:
Taylor (1969)
Wilbur, Quigley, and Montanelli (1975)

	Conjunction	Disjunction	Alternation
Level 1	May conjoin subjects and objects. • Mike *and* Joan walked home • Bill saw the cat *and* the dog. May conjoin common adverbs. • up *and* down • in *and* out	May use *but* to begin a sentence. • Fred is fat. • *But* Steve is fatter.	
Level 2	May use conjoined sentences. • Carl raked the leaves *and* then they burned them. May use conjoined verb phrases.* • Jim cooked the hot dog *and* ate it. May use conjoined adjectives. • The black *and* white car is fast. May use conjoined adverbs. • The plane flew smoothly *and* quietly. May use conjoined objects of a preposition. • We talked to Kim *and* Ray.	May use disjoined sentences. • Mary tried to leave *but* the car wouldn't start. May use disjoined verb phrases. • John washed the dishes *but* didn't dry them.	May use alternation with subjects and objects. • Sal *or* Lisa will help them. • Buy some bread *or* crackers. May use alternation with opposite adverbs. • left *or* right • up *or* down
Level 3	May use *both*...*and*. • *Both* the sons *and* daughters expected to go. May use conjoined verbs. • The kids were cutting *and* pasting designs. May use conjoined prepositions. • The wolf ran out the door *and* into the woods.	May use disjoined nouns. • She invited Bob *but* not Ann. May use disjoined adjectives. • The dress is pretty *but* very expensive. Do not use disjoined prepositional phrases. • The robbers drove down the road *but* across from the bank. Do not use disjoined verbs. • Marie hated *but* ate her vegetables. Do not use disjoined adverbs. • Basketball players move gracefully *but* slowly.	May use alternating sentences. • The water must be boiling *or* the recipe won't work. May use *either*...*or*. • He'll travel to *either* Kansas *or* Nebraska. May use alternating verb phrases. • Robin should walk to town *or* ride her bike there. May use alternating verbs. • You can't break *or* cut it.

*As indicated earlier, deaf readers are likely to impose subject-verb-object interpretation on compound structures. Therefore, conjoined and disjoined constructions at Level 2 should be semantically resistant to an incorrect subject-verb-object reading.

Comparatives and Superlatives

Comparatives
-er
-er...than
more
more...than
as...as
like

Superlatives
-est
most

Overview

Comparatives and superlatives can be thought of as reduced complex sentences. For example:

- John is *taller than* Bill.

can be viewed as a reduced combination of the two sentences

- John is tall (to a degree greater than)
- Bill is tall.

or as a reduced combination of the single sentence

- John is taller than Bill is tall.

or even the common

- John is taller than Bill is.

Comparatives and superlatives then contain two sentences in deep structure, even though they may appear to be only one sentence on the surface.

Comparatives

The comparative of one and two syllable words is formed by adding *-er* to the base. *More* is used before longer words to form the comparative.

-er...than

- Carmen is smart*er*.
- Carmen is smart*er than* her sister.

more...than

- Mary is *more* graceful now.
- Bill is *more* demanding *than* Paul.

as...as

- That's *as* far *as* you're going to get.

like

- Frieda looks *like* she just lost her last friend.

Superlatives

Superlatives areformed by adding *-est* to the base or using *most* before it.

-est

- Our state is the old*est*.
- April is the cruel*est* month.

most

- We all expected her to buy the *most* expensive hot tub.
- This is the *most* elementary text.

The Development of Comparatives and Superlatives in Hearing and Deaf Children

Very little information is available on the development of comparatives and superlatives in hearing children. What data there is suggest that young hearing children pass through a stage when they treat the comparative as though it were superlative. Thus, they might interpret *bigger* as *biggest*.

Deaf children's reading comprehension of several structures has been tested:

They understand *er...than* comparatives first, and later *like* comparatives and *-est* superlatives. The expression of inequality *not as...as* is understood by most fourth grade readers. Statements of equality using *as...as* and the *most* superlatives pose considerable difficulty for hearing-impaired readers.

Comprehension of the irregular comparative and superlative forms *lesser, least, worse* and *worst* has not been investigated. Understanding of these forms is highly dependent on the language experiences of the deaf child.

Information on the Development of Comparatives and Superlatives

For hearing children:
Donaldson and Wales (1970)

For deaf children:
Wilbur, Goodhart, and Montandon (1980)

	Comparatives	Superlatives
Level 1	May use in simple sentences. • John is angry. Bill is angri*er*. • Work hard*er*. • She hears *better* with her hearing aid. May use *-er* and *more* with *than*. • Sue is smart*er than* Fred. • Joe ate *more* candy *than* Jill. May use *more* in emphatic constructions. • Be *more* careful.	May use in simple sentences with a following noun. • Gail is the strong*est* girl. • My son is the *best* dancer.
Level 2	May use: *like* • She acts *like* a clown.	*-Est* may be used without a following noun. • Mark is the rich*est*. May use *most*.* • He is the *most* interesting boy in the class.
Level 3	May use: *same...as* • The girls have the *same* game *as* the boys. May use negatives. • Steve is *no* sadder *than* Maria. • Don is *not as* fast *as* Howard. Do not use: *as...as* • John is *as* tall *as* Bill.	May use with negatives. • They are *not* the tall*est*.

*As noted earlier, research shows that the *most* superlatives are very difficult for deaf children. However, since they are crucial for expressing basic concepts, they are allowed at Level 2.

Relative Clauses

Relative Clauses
Object-subject
Object-object
Subject-subject
Subject-object

Appositives

Overview

A relative clause is actually a sentence embedded into the main sentence. It serves as a modifier of the noun it follows. Relative clauses are introduced by relative pronouns, which are the WH-words *who, whom* and *which*, or by *that*. There are four basic types of relative clauses which arise from combinations of two factors:

- whether the relative clause is embedded into the subject or the object noun phrase in the main sentence
- whether the relative pronoun functions as the subject or the object of the relative clause.

Relative Clauses

Object-subject

The relative clause is embedded into the object noun phrase of the main sentence and contains a relative pronoun which functions as the subject of the relative clause. Formation starts with two sentences:

- Tom saw the woman.
  (The *object* is woman.)
- The woman stole the bicycle.
  (The *subject* is woman.)

The second is embedded in the first, thus giving the name object-subject relative clause.

- Tom saw the woman *who stole the bicycle*.

Object-object

The relative clause is embedded in the object noun phrase of the main sentence and contains a relative pronoun which functions as the object of the relative clause. Two sentences become one.

- Jerry met the woman.
  Jack married the woman. ⧫
  Jerry met the woman *who(m) Jack married*.

The relative pronoun may also refer to the object of a preposition.

- This is the house.
  Jack lives in the house. ⧫
  This is the house in *which Jack lives*.

Subject-subject

The relative clause is embedded in the subject noun phrase of the main sentence and contains a relative pronoun which functions as the subject of the relative clause. Two sentences become one.

- The dog did not have rabies.
  The dog bit the mailman. ⧫
  The dog *which bit the mailman* did not have rabies.

Subject-object

The relative clause is embedded in the subject noun phrase of the main sentence and contains a relative pronoun which functions as the object of the relative clause. Two sentences become one.

- The dog limped away.
  The boy kicked the dog. ⧫
  The dog *which the boy kicked* limped away.

Reduced Relative Clauses

Sometimes the relative pronoun and the verb *to be* are left out of a relative clause.

- Jerry met the woman *(whom) Jack married*.
- The girl *(who is) picking daisies* is trespassing.

Appositives

Appositives are phrases which contain extra information. In writing, commas are used to set off appositives from the rest of the sentence.

- Mr. Chadwick, *the postman*, never missed a day of work.

Appositives are often used in introductions.

- Susan Sprocket, *the car mechanic*.

The Development of Relative Clauses in Hearing and Deaf Children

For both hearing and deaf children, relative clauses are a late acquisition. For both groups, relative clauses which modify object noun phrases in the main sentence are acquired before relative clauses which modify subject noun phrases in the main sentence. The

primary reason is that relative clauses which modify the subject noun phrase interrupt the main sentence and lead children to incorrectly understand the sentence. For example, "The boy who hit the girl ran away" contains a relative clause *who hit the girl* which modifies *boy*. In this sentence it is the boy who ran away, but many children, seeing the sequence "girl ran away," misunderstand the sentence.

The function of the relative pronoun in the relative clause seems to have only a small effect on the acquisition of relative clauses. Subject relative pronouns tend to be slightly easier than object relative pronouns, but compared to the larger problem created by the position of the relative clause in the sentence, this difference is negligible.

We know of no data on the development of appositives in either hearing or deaf children.

Information on the Development of Relative Clauses — *For hearing children:* Cook (1975), Sheldon (1974) — *For deaf children:* Quigley, Smith, and Wilbur (1974a)

	Object-subject	Object-object	Subject-subject	Subject-object	Appositives
Level 1					
Level 2					May use: • Meet my daughter, *the doctor*.
Level 3	May use: • Tom saw the woman *who stole the bicycle*. • This is the cat *that ate the rat*. May use relative pronoun deletion. • I saw the ball *(which was) rolling down the hill*.	May use: • Tom saw the woman *who(m) he met last week*. Do not use relative pronoun deletion. • This is the house *(that) Jack built*. Do not use relative clauses where the relative pronoun is the object of a preposition. • Is that the man with *whom I saw you yesterday?* Do not use a relative clause in a sentence which is already complex. • This is the ball *which John said* (that) he lost yesterday.	Do not use	Do not use	

Complements

That-complements
Infinitive Complements
WH-word Complements
Participial Complements

Overview

In section 2.11, we described how a sentence may be embedded inside of another sentence to modify the subject or object noun phrase of the main sentence. When the embedded sentence itself serves as the subject or object of the main verb in the sentence, it is called a *complement*. For example, in "I heard that Sam stole the files," the object of *heard* is *that Sam stole the files*. Different types of complements result from different forms that the embedded sentence can take.

That-complements

In that-complements, the entire sentence is embedded into the main sentence, with the word *that* as a complement marker.

- Daniel believed *that he could kill the lions*.
- No one was surprised *that the oil tanker blew up*.
- Roberta was relieved *that her loan came through*.

In that-complements, *that* may be deleted.

- Can you believe *(that) you're sitting there reading about syntax?*

Relative clauses and that-complements are often mistaken for each other. The crucial difference between them is the kind of question each answers: while relative clauses answer the question *which one*, complements answer the question *what*.

- Let's drive by the house *that Jack built*. (relative clause)
- People will say *we're in love*. (that-complement)

Infinitive Complements

Sentences with infinitive complements are formed from two underlying sentences. When the second sentence is embedded into the first sentence, the embedded verb is changed to its infinitive form (*to* + verb). For example, the two sentences "John asked Mary" and "Mary left the room" might combine to produce

- John asked Mary *to leave the room*.

Here the infinitive complement functions as the object of the verb. Notice that *Mary* is the subject of *leave*, while *John* is the subject of *asked*. When the subjects of the first and second sentences are the same, the second subject is not repeated, so "Paul asked for permission" and "Paul left the room" combine to form

- Paul asked for permission *to leave the room*.

An infinitive complement may also function as the subject of a sentence.

- *To conduct at the Metropolitan* is her ambition.

In sentences with certain verbs, the infinitive complement is not marked with *to*.

- Her pride wouldn't let Ramona *beg Harold for mercy*.
- Sidney heard the thief *trip in the lobby*.
- Dorothy saw a munchkin *pick up Toto*.
- Leonore helped Greg *put on his roller skates*.

Finally, the reader should be aware that sentences with predicate adjectives may also take infinitive complements.

- Larry was anxious *to test the finished product*.
- Mr. Biddle seemed hesitant *to borrow Celeste's motorcycle*.

WH-word Complements

WH-word complements are introduced by a WH-word. The complement may contain either a regular verb or an infinitive. These complements look very similar to indirect questions and are chiefly distinguished from them by the meaning of the main verb.

- Everyone wondered *what had become of Stuart*.
- Annette didn't know *whom to accuse*.
- I wonder *when my prince will come*.
- He reminded her *why she should brush three times a day*.
- Virgil's performance shows us *how not to tango*.
- Celia almost forgot *which turn to make*.
- They decided *where to stash the explosives*.

Participial Complements

In another type of complement, the verb appears in its participial *(-ing)* form. The two sentences "Something annoyed Sally" and "John left the party early" result in

- *John's leaving the party early* annoyed Sally.

In this example, the participial complement acts as the subject of the sentence. It can also be the object. Combining "Harold didn't remember something" and "Harold wore a lampshade on his head" produces

- Harold didn't remember *wearing a lampshade on his head*.

Another example starts with "Neville enjoyed something" and "Neville played the tuba" to form

- Neville enjoyed *playing the tuba*.

Notice that in this last participial complement, the subject of the embedded sentence is the same as the subject of the main sentence and is not repeated.

Finally, the participial ending *-ing* may be added to verbs to form nouns. These new words are often called gerunds. The formation of gerunds does not involve complementation and thus is not a syntactically complex structure.

- *Walking on this filthy beach* is hardly romantic.
- I'm giving up *drinking*.

The Development of Complements in Hearing and Deaf Children

In young hearing children, the first complement constructions are *wanna, gonna, hafta,* and *gotta,* which are reduced forms of *want to, going to, have to,* and *got to*. These are infinitive constructions, but when children first use them, they are actually memorized as units. Only later do hearing children learn to produce infintive (or other) complements with a wide range of verbs. The data indicate that hearing children master infinitive complements before that-complements and WH-complements. Participial complements are acquired relatively late.

The data available on deaf students' abilities to handle complementation indicate that as late as 16 years of age, deaf students experience difficulty understanding most complements. The common forms such as *want to* and *try to* are the easiest, as with hearing children. Infinitive complements with active verbs (*tell, start*) are easier than infinitive complements with stative verbs (*seems, appears*).

- His eyesight began *to fail him at an early age*. (active)
- Parsons seems *to have boundless energy*. (stative)

Deaf students produce very few correct complements in their language. With a few exceptions, complements are the hardest structures so far investigated with deaf students. They are likely to impose an incorrect subject-verb-object word order on a complement structure. For example, deaf students might interpret

- The doctor will help Sam by prescribing medicine.

by linking adjacent nouns and verbs to give

- The doctor will help Sam.
- Sam will prescribe medicine.

Likewise, they might interpret

- Frank promised Mary to leave.

to mean

- Frank promised Mary.
- Mary will leave.

A similar problem related to the interpretation of the surface order of words is likely to occur with negative complements. For example, the use of *not* in sentences with infinitive complements leads to subtle differences in meaning, depending on its placement. Consider the different senses of the following:

- She did *not* say to take four pills.
- She said *not* to take four pills.

Yet deaf students may not make such subtle distinctions in their interpretation of sentences. The same kind of situation holds with participial complements.

- He remembers *not* calling his mother on her birthday.
- He *doesn't* remember calling his mother on her birthday.

Information on the Development of Complements

For hearing children:
Limber (1973)
Chomsky, C. (1969)

For deaf chidren:
Quigley, Wilbur, and Montanelli (1976)

	That-complements	Infinitive Complements
Level 1		May use: *want to* *try to*
Level 2	May use only in final position. • I know *that Sam stole the cookies*. May delete *that*. • I know *Sam stole the cookies*.	May use where subject of complement is same or different from subject of main verb. • Bill started *to run*. • Joan told Ted *to leave*.
Level 3	Do not use in medial or initial position. • *That John left early* bothered me. • The fact *that John left early* bothered me.	Do not use as subject. • *To err* is human, *to forgive* divine. Do not use negative. • We remembered *not to fill the gas tank*.

May use only in final position.
- Bill knew *how he could succeed*.
- She saw *where the bear was hiding*.

May use with infinitive complements.
- The guide told us *when to row*.
- Tell me *who to vote for*.

Do not use as object of a preposition.
- I thought about *why she left me*.

Do not use as subject.
- *What to do with the dragon* worried St. George.

May use if imposition of subject-verb-object reading will not give incorrect interpretation.
- I saw Mom *running*.
- They heard the birds *singing*.
- Dan doesn't remember *meeting her before*.

Do not use if imposition of subject-verb-object word order gives incorrect interpretation.
- Jamie hurt Diane by *ignoring her invitation*.
- Sylvia can't find Howard without *leaving the room*.

Do not use negative.
- They believe *not eating candy* is bad for you.

Overview of the Syntactic Guidelines

The following chart is a summary of the guidelines for selected syntactic structures. It is not comprehensive; only frequently used structures and some clarifying examples appear. However, once users are familiar with the guidelines, the chart can serve as a useful reminder of the correspondence between structure and level.

A Note of Caution

The guidelines for Levels 2 and 3 discuss complex sentences in which one sentence is embedded within another. But, of course, written English does not limit itself to single embeddings; often a complex sentence consists of a number of shorter sentences. The following is an example:

> Scientists say that when the company built the nuclear power plant which used the pump, it did not tell the workers that it knew the pump was dangerous.

All of the separate structures used here — adverbial and relative clauses and that-complements — are allowed at Level 3. But they should not be used together in a single sentence. The combination makes the sentence too difficult for the Level 3 reader. Editors should be careful not to include more than one or two embeddings in a sentence.

	Level 1	Level 2	Level 3
Determiners, Demonstratives and Adjectives	One adjective per noun •a big dog	Two adjectives per noun •a large red square	
Verbs and Auxiliaries	Progresive (*-ing*) aspect •Cal *was running* fast. The modals *can* and *may*	The modals *might*, *must* and *would* Elliptical verb phrases •Stop crying. *I won't.*	Perfective aspect •*Have* you *seen* a UFO? The modals *should* and *could* Do not use passives
Adverbs, Adverbial Clauses and Adverbial Complements	One adverb in final position per sentence if no prepositional phrase Time adverbs usually are avoided	Two or more adverbs • *Sometimes* he goes *outside* with *only* one shoe. *If...then* sentences *Because* and *until* clauses •Julie will keep her job *until* her boss forces her to leave.	*Before*, *after*, *while*, *when* and *so* clauses •Sean won the election *before* he admitted he had been in jail. *Enough...to* and *so...to* complements •I'm hungry *enough to* eat a horse. •They're *so* happy *to* meet us.
Prepositions, Particles and Prepositional Adverbs	One prepositional phrase per sentence Dative movement •Sue gave Jim flowers.	Two or more prepositions per sentence	Particle movement •When will they *pick* the rug *up*?
Pronouns	Limited to first and second person singular (*I*, *me*, *you*) Others allowed if illustrated	The "dummy" it •*It*'s so easy to fall in love. There-insertion •*There*'s no one in the closet. Indefinite pronouns •Don't tell *anyone*.	Reflexives •You should be ashamed of *yourself*.
Negatives	The negatives *no* and *not*		The negatives *never* and *not yet*
Questions	Yes/No questions *Who*, *what* and *where* questions *Why* questions followed by *because*	*When*, *whose* and *why* questions	*How* and *which* questions Negative questions •Isn't she lovely? Do not use tag questions
Imperatives	Simple imperatives •Come here.	Imperatives with *you* •*You* be quiet.	Indirect imperatives •John said *to go home*.
Conjunction, Disjunction and Alternation	Nouns joined by *and* •My brother *and* my sister played soccer.	Sentences joined by *and* and *but*	Sentences joined by *or* •Be home by midnight *or* you'll
Comparatives and Superlatives	Simple comparatives and superlatives •Lisa is strong*er than* Jack. •Don is the funni*est* clown.	Comparatives with *like* •This feels *like* sandpaper.	Negative comparatives •My vacation was *not as* long *as* I had hoped.
Relative Clauses			•She is the dancer *(whom) we saw at Lincoln Center*.
Complements	Infinitive complements *want to* and *try to* only. •John *wants to* eat candy.	That-complements •I saw *(that) you cheated*. Infinitive complements •Help me *remember that number*.	WH-complements •She doesn't know *who to blame*.

Word Index

The following word list refers the reader to the section(s) in the syntactic guidelines in which each word can be found. Some words appear in more than one section depending on the context in which they are used; section designation does not necessarily correspond to part of speech. The index is limited to those words specifically mentioned in the guidelines.

A

Able (be *able* to)	*det*
About	*verb*
About (be *about* to)	*prep*
Above	*verb*
Across	*prep*
After	*prep*
Against	*adv; prep*
A lot of	*prep*
All	*det*
Along	*det*
Although	*prep*
Among	*adv*
An	*prep*
And	*det*
Another	*conj*
Another (one *another*)	*det*
Any	*pro*
Anybody	*det; neg*
Anymore	*pro; neg*
Anyone	*adv*
Anything	*pro; neg*
Anyway	*pro; neg*
Around	*adv*
As...as	*prep*
As though	*comp*
At	*adv*
Away	*prep*

B

Be	*verb*
Because	*adv; ques*
Before	*adv; prep*
Behind	*prep*
Below	*prep*
Beneath	*prep*
Beside	*prep*
Best	*comp*
Best (had *best*)	*verb*
Better	*comp*
Better (had *better*)	*verb*
Between	*prep*
Beyond	*prep*
Both	*det*
Both...and	*conj*
But	*conj*
By	*prep*

C

Can	*verb*
Cannot	*neg*
Can't	*verb; neg*
Could	*verb*
Couldn't	*verb*

D

Did	*verb*
Didn't	*verb; neg*
Do	*verb; neg; ques;*
Does	*verb*
Doesn't	*verb; neg*
Don't	*verb; neg; imp*
Down	*prep*
During	*prep*

E

Each	*det*
Each other	*pro*
Either...or	*conj*
Enough...to	*adv*
Even	*adv*
Every	*det*
Everybody	*pro*
Everyone	*pro*
Everything	*pro*
Except	*prep*

F

Finally	*adv*
For	*prep*
From	*prep*

Abbreviations:

Det	Determiners, Demonstratives and Adjectives
Verb	Verbs and Auxiliaries
Adv	Adverbs, Adverbial Clauses and Adverbial Complements
Prep	Prepositions, Particles and Prepositional Adverbs
Pro	Pronouns
Neg	Negatives
Ques	Questions
Imp	Imperatives
Conj	Conjunction, Disjunction and Alternation
Comp	Comparatives and Superlatives
Rel	Relative Clauses
Complm	Complements

G	
Going to	*verb*
H	
Had	*verb*
Had best	*verb*
Had better	*verb*
Has	*verb*
Have	*verb*
Have to	*verb*
Haven't	*verb*
He	*pro*
He'd	*verb*
He's	*verb*
Her	*pro*
Here	*adv*
Hers	*pro*
Herself	*pro*
Him	*pro*
Himself	*pro*
His	*pro*
How	*ques; complm*
How much	*ques*
How many	*ques*
I	
I	*pro*
I'd	*verb*
I'm	*verb*
If	*ques*
If...then	*adv*
In	*prep*
In back of	*prep*
In front of	*prep*
In order that	*adv*
In that	*adv*
Inside	*prep*
Instead of	*prep*
Into	*prep*
Isn't	*verb*
It	*pro*
Its	*pro*
Itself	*pro*
I've	*verb*
J	
Just	*adv*
L	
Like	*comp*
Lots of	*det*

M	
Many	*det*
May	*verb*
Maybe	*adv*
Me	*pro*
Might	*verb*
Mine	*pro*
More	*comp*
Most	*comp*
Much (too *much*)	*det*
Must	*verb*
My	*pro*
Myself	*pro*
N	
Near	*prep*
Need to	*verb*
Neither	*neg*
Never	*neg*
No	*det; neg; imp; comp*
No longer	*neg*
No one	*pro; neg*
Nobody	*pro; neg*
None	*neg*
Not	*neg; imp; comp*
Not as...as	*comp*
Not yet	*neg*
Nothing	*pro; neg*
Now that	*adv*
O	
Of	*prep*
Off	*prep*
On	*prep*
One another	*pro*
Opposite	*prep*
Or	*conj*
Other (each *other*)	*pro*
Ought to	*verb*
Our	*pro*
Ours	*pro*
Ourselves	*pro*
Out	*prep*
Outside	*prep*
Outside of	*prep*
Over	*prep*

P	
Please	*adv*
Probably	*adv*
Provided that	*adv*

S	
Same…as	*comp*
Shall	*verb*
She	*pro*
Should	*verb*
Shouldn't	*verb*
Since	*adv; prep*
So	*adv*
So…that	*adv*
So…to	*adv*
Some	*det*
Somebody	*pro*
Someone	*pro*
Something	*pro*
Supposed to	*verb*

T	
Than	*comp*
That	*det; rel; complm*
The	*det*
Their	*pro*
Theirs	*pro*
Them	*pro*
Themselves	*pro*
Then	*adv*
There	*adv*
There (*there* is *there* are)	*pro*
These	*det*
They	*pro*
They're	*verb*
This	*det*
Those	*det*
Through	*prep*
To	*prep; complm*
Today	*adv*
Tomorrow	*adv*
Too much	*det*
Too…to	*adv*
Toward	*prep*
Try to	*verb; complm*

U	
Unable (be *unable* to)	*verb*
Under	*prep*
Unless	*adv*
Until	*adv; prep*
Up	*prep*
Us	*pro*
Used to	*verb*
Usually	*adv*

W	
Want to	*verb; complm*
We	*pro*
We'll	*verb*
What	*ques; complm*
What color	*ques*
What kind (of)	*ques*
What time	*ques*
When	*adv; ques; complm*
Whenever	*adv*
Where	*ques; complm*
Whether	*ques*
Which	*ques; rel; complm*
While	*adv*
Who	*ques; rel; complm*
Whom	*rel*
Whose	*ques*
Why	*ques; complm*
Will	*verb*
With	*prep*
Without	*prep*
Won't	*verb*
Would	*verb*
Wouldn't	*verb*

Y	
Yesterday	*adv*
Yet	*adv*
Yet (not *yet*)	*neg*
You	*det; pro; imp*
You'll	*verb*
Your	*pro*
Yours	*pro*
Yourself	*pro*
Yourselves	*pro*

Inference

Introduction

Words and syntactic structures certainly are the foundation of meaning in language. However, meaning is not derived solely from understanding these components; words and syntactic structures provide only a framework of meaning. In order to interpret accurately what the writer intended, the reader must also organize and expand these explicit meanings. During this process, frequently meanings must be filled in from information which is not directly stated but only implied. These implied meanings are called inferences, and the ability to draw inferences is a crucial skill in language comprehension. For the reader who does not make the appropriate inferences, much of the underlying significance of the text is lost.

The remainder of this chapter attempts to provide the reader with:

- an awareness of the role of inference in language comprehension and reading
- an understanding of various types of inference
- an awareness of deaf children's problems with inference
- an introduction to editing techniques which give attention to inference and thereby help the reader to understand the text more fully.

The Role of Inference in Language Comprehension

Each time we try to understand a spoken or written sentence, we first try to figure out what the literal meaning is. But, as indicated above, most often we will infer additional meanings and new relationships based on our literal understanding and our knowledge of what is appropriate.

Consider the steps one goes through in interpreting the following sentences:

- Can you tell me the name of the doctor who did Phyllis Diller's facelift? We're going to be in Los Angeles for a vacation next week and I thought my wife might get her face done over.

These sentences are certainly straightforward and easy to understand. However, just how much of our understanding is literal and how much is inferential deserves further consideration.

Based on literal understanding, we could answer the following questions:

- Who had a facelift?
- Why are they going to Los Angeles?
- When are they going there?

Responding to these questions would not be difficult because the answers are clearly stated in the speaker's original sentences. They are derived primarily from the ability to interpret the syntax of the sentences and the meanings of words. But what would we answer to the following questions and how would we be able to arrive at the answer for each?

- Was the person who asked the question male or female?
- Where did Phyllis Diller have her facelift done?
- Whose face might get done over?
- Where will the wife get her face done over?

The answers to these questions were not contained in the text in any obvious or literal way but are dependent on the reader's ability to infer.

Legal and Invited Inferences

In thinking about inferences, it is helpful to make a distinction between what is "legal" and what is "invited." *Legal inferences* can be defined as those meanings which most people would typically incorporate into their understanding. *Invited inferences* generally require more contextual information to be present before they can be inferred with any certainty. Anyone who has ever had a disagreement with another person will probably recognize the class of invited inferences as those meanings which people assume and which later lead us to pronounce righteously, "But I never said that!" Thus, inference is a highly individual process by which certain people will infer particular meanings and others may infer another set of related ideas.

Legal and invited inferences are outlined below for the sentence "John tried to fix the car."

Legal

- It was John who worked on the car. (John didn't bring the car to a mechanic.)
- The car needed to be fixed.
- John wanted the car to be fixed.
- John could not fix the car.
- John used one or more tools.

Invited
- John owned the car.
- The car was old.
- The car was real (not a toy).
- John knew how to fix the car.

Categories of Inference

Various taxonomies of inference have been described by researchers in a number of disciplines. As a framework for analyzing the inferential content of text, the multi-level system of language editing uses four broad categories of inference—*word, syntactic, contextual* and *thematic*. These are defined and described below. For a detailed breakdown of each category, the reader should refer to the appendix at the end of this chapter.

Word Inference

Word inference can be thought of as two abilities related to interpretation of specific words in a sentence. First, through word inference we pick one meaning when there is ambiguity and second, through word inference we elaborate meanings. It is word inference, then, which accounts for our ability to interpret individual words with multiple meanings and even to interpret some word groups as in the case of idiomatic expressions. It is based on sentence relations and broader context.

Thus, in the sentence, "John and Mary *made out* very well," word inference would determine which of several possible meanings of *made out* to accept: whether *made out* means John and Mary were giving an excellent demonstration of necking, jointly achieving some goal, or performing well in some other way.

Syntactic Inference

Syntactic inference refers to meanings which are elaborations of what we understand from our syntactic analysis of a sentence. Some of the more common examples where syntactic and inferential comprehension go hand in hand are the following:

When a sentence contains a pronoun, we must infer the referent.

- We all wanted to talk to her.
  (Who is her?)

In an agent-deleted passive, we must infer who carried out the action.

- The cookies were eaten when we got home.
  (By the little brother?)

When certain actions take place, we must infer what tool was used.

- We played ball until Mary broke Mr. Green's front window.
  (With a ball? A bat? Mary's elbow?)

It is possible that the syntactic guidelines might allow a structure which the editor feels should not be used because of the difficulty of the syntactic inference involved. For example, although many forms of pronominalization are used at Level 3, the original noun might be retained or repeated if the editor thinks the referent appears too far from the pronoun that would replace it.

Contextual Inference

Contextual inference involves the addition of meanings which complete a scene or description. Through contextual inference, meanings that are common to any situation are added, such as the location and time of an action and the attitudes and motivations of characters. Life experience and world knowledge influence our ability to draw contextual inferences. The following two sentences illustrate the process of contextual elaboration the reader automatically goes through.

- John kissed Mary.
  (Because he wanted to or because she was sad?)
- I saw Sue at work yesterday.
  (During the daytime or in the evening?)

Like word inference, contextual inference can serve to specify the particular meaning of a sentence which could have numerous interpretations if no attention were given to contextual factors.

- John could never make dinner for himself.
  (Because he could only eat dinner when he had someone to share it with?
  Because he was quadriplegic?
  Because it was below his station?
  Because he was only ten months old?
  Because he lived in a hotel and they did not allow cooking in the rooms?)

Also, contextual inference must be used to find the correct meaning in the following syntactically ambiguous sentence:

- Kicking karate instructors can be dangerous.

Some researchers in deafness have stressed the crucial role prior knowledge and life experience may play in the reading abilities of deaf children. Studies have indicated that familiarity with subject matter aids the reader's comprehension. For example, given two passages at the same reading level—one about a familiar topic and the other about an unfamiliar one—deaf readers are more likely to comprehend the familiar passage (Gormley, 1980). Thus, it is possible that total mastery of syntactic structures may not be necessary for understanding connected text.

Instead, the reader may depend on appreciation of incongruence, expectations about the way the world works, and information from other sentences to make sense of a passage (Gormley and Franzen, 1978). Therefore, for example, even if a child has not mastered passive sentences, s/he will understand the meaning of "The dog was hit by the truck" because of previous experience in the world.

Thematic Inference

Thematic inference results from recognizing the broad structure of discourse in stories or conversations. Thematic inference, then, is fundamentally different from the three forms of inference outlined above. Instead of creating new information to add to literal meanings, thematic inference serves to label and structure the literal meanings.

This notion of structure is sometimes referred to as *story grammar*, which has been described by various researchers in a number of ways. There is, however, basic agreement about the components of story grammar and the order in which they appear (Johnston, 1980). Stein and Glenn (1977) have outlined the structure of a simple story as containing a *setting* and an *episode*. In the setting, the leading character is introduced and information is given about the social, physical and temporal context of the story. In Stein and Glenn's analysis, an episode contains

1. an *initiating event*, which causes the main character to respond to it;
2. an *internal response*, which may include the setting of a goal by the character;
3. an *attempt* by the character to attain the goal;
4. the *consequence* of the attempt, including the attainment or non-attainment of the goal, and
5. the *reaction* of the character to the consequence.

Stein and Glenn provide an example of a well-formed simple story which illustrates each component.

Setting:	Once there was a big grey fish named Albert who lived in a big icy pond near the edge of a forest.
Initiating Event:	One day, Albert was swimming around the pond when he spotted a big juicy worm on top of the water.
Internal Response:	Albert knew how delicious worms tasted and wanted to eat that one for his dinner.
Attempt:	So he swam very close to the worm and bit into him.
Consequence:	Suddenly, Albert was pulled through the water into a boat. He had been caught by a fisherman.
Reaction:	Albert felt sad and wished he had been more careful.

The ability to recognize discourse structure is crucial in deciding what is important information and how it is relevant. The competent reader will be able to determine the purpose of information as it is presented and integrate the various components into a coherent whole.

An Example of the Use of Inference

Inferencing occurs when context has been developed following the introductory portion of a story or the exchanges of a conversation. The following sample text is presented to illustrate the variety of inference which can be created, as well as the necessity of making inferences to understand conversations and actions.

- Today was Jack's birthday. Janet and Penny went to the store. They had to get presents. "I will get a top," said Janet. "Don't do that," said Penny. "Jack has a top. He will make you take it back."
(From Charniak, 1976.)

Word Inference:

Word inference would cause the reader to interpret *store* as a place where one buys presents (rather than groceries), *get* as the act of purchasing (rather than contracting something like a disease), and *top* as a toy (rather than a canvas roof for a convertible car).

Syntactic Inference:

Through syntactic inference the reader would interpret *Don't do that* to mean *not to buy a top* and would provide appropriate referents for each of the pronouns (*they, I, he, you,* and *it*). Knowing what *it* refers to would be especially difficult since the nearest referent is another *top* which Jack already owns.

An additional syntactic inference derived from knowledge of direct discourse rules would associate the intended receiver and speaker of each quote, particularly for the last quote, which does not have an explicit speaker associated with it.

Contextual Inference:

Contextual inference would provide additional information based on the specific situation and the knowledge of general patterns of people's behavior, so that the reader might infer any of the following meanings:

– Most likely, the girls (or were they women?) went to the store to buy a present.

– They had to or wanted to get presents for a particular reason and a particular person, Jack, since it was his birthday.

– Janet and Penny planned to go to a birthday party which Jack and/or Jack's mother (or father) was planning. We might conclude that it was a mother or father as opposed to a spouse simply because Janet and Penny wanted to buy a top and only a child would be given a top as a birthday present.

– Janet and Penny were probably in the store before the birthday party had taken place, rather than after.

– Penny advised Janet not to get Jack a top because she believed that Jack already had at least one top and that Jack would not want two. Penny, in fact, was inferring an outcome to presenting Jack with the additional top; i.e., that Jack would make Janet take back the top.

– If Janet were to *take it back*, she would be taking it to the store from which she purchased it.

– Additionally, we might want to infer how Janet and Penny got to the store or other non-crucial information simply because it might make our perception of events more cohesive.

Thematic Inference:

Thematic inference would lead the reader to put the setting in a store on the day of Jack's birthday. The first episode begins with an *initiating event*—a trip to the store—and with the statement of a *goal*; i.e., the girls must bring appropriate presents for Jack. The first episode also indicates a thwarted *attempt*; i.e., Janet should probably not follow through on her first choice. This episode leaves the reader awaiting further attempts to achieve the goal and resolve the problem of what to buy Jack.

Actually, considerably more information could be inferred from the story episode. For example, we could infer that

– Jack is not having his first birthday; i.e., he is not being born today.

– Janet and Penny had to get presents by their own choice; i.e., it was not a legal requirement.

– When Janet said, "I will get a top," she meant she would do so that same day rather than next week or next year.

– When Janet and Penny had their conversation, it was probably while they were either on their way to the store or while already in the store. The conversation probably did not take place at the birthday party.

To continue with the same sample text, readers might correctly or incorrectly infer any of the following meanings. Which of the sentences below would be acceptable inferences?

– Jack is no longer alive?

– Janet and Penny live in the same town as Jack.

– Penny knows Jack better than Janet.

– Penny and Janet will each buy one present for Jack.

– Jack would not like to have more than one top.

– Jack will tell Janet he already has a top if Janet gives him a top as a present.

– When Janet said, "I will get a top," she meant she would get it for herself.

– Penny wanted to get a top for Jack.

– Penny wanted to help Janet get a good present for Jack.

– Janet appreciated Penny's telling her that Jack already had a top.

– Janet and Penny went to the store on Jack's birthday.

– Janet and Penny planned to go to Jack's birthday party.

A Perspective on the Inferential Process

What causes a person to infer? An early notion about inference was that it took place when a problem arose or a question was asked and there was no way to respond without coming up with new interpretations of what was already known. This implied that a person would listen or read just for literal information. Only when later questioned about what was understood would a person need to infer information by retrospection.

It may already be clear that there are serious problems with this idea. First of all, word and syntactic inferences have already been shown to be necessary just to interpret the literal meaning of sentences. Contextual and thematic inferences are just as important, and make a story or conversation more coherent and understandable. Research with children and adults has shown that a person is actively incorporating inferences of all four types while interpreting literal information. Of course, this does not rule out the original notion of inference as a retrospective process associated with question answering. That is, we can continue to make new inferences about completed discourse when we need to answer new questions.

Deaf Children's Inferential Abilities

Hearing children acquire the ability to fill in inferred meanings by long exposure to oral discourse. Then, when they begin to read, they must learn both to recognize the printed word and to apply the inferential skills already acquired from oral communication to written discourse (Frederiksen, 1977b). Analyses of commonly used reading tests show that at grades 1 and 2 they chiefly measure the ability to decode the printed word and to understand literal information. By the middle of the third grade, they begin to test the reader's ability to organize material and draw inferences (Durrell, 1955). It is generally agreed among reading experts that basal reading books for children also reflect this shift of emphasis. Beginning books represent exercises in decoding; the short passages in them show little plot development or structure. Later books contain stories which require the reader to recognize the structure of the material being presented.

Research has pointed to the weakness of inferential ability in deaf readers (Wilson, 1979; Wilson, Karchmer and Jensema, 1980). When deaf children begin to read, not only must they learn to decode the printed words but, at the same time, they often must work to acquire the language itself. Unlike hearing children, they have no oral discourse skills in drawing inferences to apply to the reading task. It is perhaps not just coincidence that the average deaf high school graduate does not advance beyond the fourth grade on standardized reading tests—the point at which, as noted above, these tests are assessing inferential skills.

Given the failure of many hearing-impaired children to master English, it is understandable that the four types of inference described earlier would pose difficulties for them.

Word Inference:

Deaf children's limited vocabularies would interfere with their ability to draw word inferences, since the deaf reader often lacks knowledge of a word's multiple meanings.

Syntactic Inference:

If many of the syntactic structures of a language are not understood, then inferences based on these structures cannot be made.

Contextual Inference:

The general effect of reduced language skills would inhibit the understanding of contextual inferences; i.e., contextual inference depends upon world knowledge which the deaf reader may lack because of his/her language deficit.

Thematic Inference:

Deaf children are not routinely exposed to stories the way that hearing chilren are. It is rare for the parents of deaf children to sit with them regularly for story-telling when they are small and, therefore, when they begin to read, they are not familiar with the way stories "work." Nor do deaf children have full access to many television programs, another source of experience for hearing children with the structure of stories and other narratives.

Guidelines for Editing Inferential Material

To date, educators of the deaf have given little attention to inference. However, it should be clear that materials written for deaf students must be carefully controlled for inferential content. The editor must be aware of the amount of inferencing that will be required of the reader and be able to make inferential information explicit when necessary.

As must be obvious by now, inference is a process in language comprehension that is highly dependent on the context in which it occurs. Because of this, guidelines for dealing with inference cannot be conveyed independent of content by a set of specific rules at three levels, as was possible in the Syntax chapter. Instead, each occurrence of inference must be dealt with individually. The editor must determine the complexity of the inferential material and then decide if it makes an important contribution to comprehension of the text. If so, the original material should be restated more directly.

As a rule of thumb, at Level 1, inferences are made explicit whenever possible. Word inference is controlled by avoiding words with multiple meanings. The syntactic guidelines for Level 1 permit such a restricted range of grammatical forms that they exclude the possibility of many syntactic inferences. On the other hand, these same guidelines may make it difficult for the editor to clarify other kinds of inferences. For example, contextual inference is explained at Level 1 by providing unambiguous interpretations of people's motives and actions. However, the *because* construction, which is helpful in directly connecting cause and effect, is considered too difficult for this level. The first stage in editing, that of material selection, would eliminate texts which contain difficult thematic inferences, such as those which portray complicated relationships between characters.

The distinction between inference at Levels 2 and 3 has not yet been well delineated. In general, progressively more inference is allowed. Words with multiple meanings are more frequently used and more syntactic inferences are included in accordance with increasingly difficult syntactic guidelines. Text selection for Levels 2 and 3 reflects the fact that readers are able to draw more inferences. Stories may contain a greater number of episodes or characters involved in more complicated conflicts. These features would be too sophisticated for the Level 1 reader.

Examples of inference editing are given in the following chapter entitled "Application of the Guidelines."

Appendix

The four inference categories are further detailed in this section with brief descriptions and examples of sentences and associated inferences. Each example starts with a sentence and is followed by the information which would be understood based on a particular kind of inference. Many of the examples are taken from Frederiksen (1977b) and Charniak (1976), both of which provide excellent discussions of inference and its role in language comprehension.

Word Inference

Concept Reduction:
A general description is made more specific.

The baby left *a mess* on the table. ⧫
The baby left *milk and food* on the table.

Concept Expansion:
A specific description is made more general.

The baby left *milk and food* on the table. ⧫
The baby left *a mess* on the table.

Subordinate Expansion of Subject:
A more specific noun phrase is used for the subject noun phrase.

The *students* talked. ⧫
The *boys and girls* talked.

Subordinate Expansion of Action:
A more specific object noun phrase is used.

I'm *gonna beat you up*. ⧫
I'll *sock you in the head*.

Subordinate Expansion of Object:
A more specific object noun phrase is used.

She cleaned up *the whole mess*. ⧫
She cleaned up *the pot*.

Superordinate Expansion of Subject:
A more general subject noun phrase is used.

Michelle watered the flowers. ⧫
A little girl watered the flowers.

Superordinate Expansion of Action:
A description of action in the verb phrase is made more general.

Mary *cut up* the carrots and *boiled* them. ⧫
Mary *cooked* the carrots.

Superordinate Expansion of Object:
A noun phrase as the object is made more general.

John watered *the flowers*. ⧫
John watered *the plants*.

Connotation:
Words giving the generally accepted connotation are replaced or added.

John has a *big* son. ⧫
John has a *big, strong* son.

Present to Future:
Present tense verb is changed to the implied future tense.

I *work* really hard. ⧫
I *will work* really hard.

Past to Completed Past:
Past progressive verb phrase is changed to past indicative to indicate that the action was completed and is not continuing to the present.

John *was working* on the truck. ⧫
John *worked* on the truck.

Part to Whole:
A noun phrase is replaced with the larger object of which it is part.

John hit *the roof* with the ball. ⧫
John hit *the house* with the ball.

Whole to Part:
A noun phrase is replaced with a second noun phrase which is a component of the first noun phrase.

Mary put a dent in *her car*. ⧫
Mary put a dent in *her car door*.

Action-State:
An action is changed into the state which results from that action.

John *screamed* at Mary. ⧫
John was *mad*.

State-Action:
A state is changed into the action associated with that state.

Mary was *hot*. ⧫
Mary *perspired*.

Syntactic Inference

Comparative Inference:
The person or object which is part of the comparison is filled in.

John is quicker. ⧫
John is quicker *than Mary*.

Pronoun Reference:
The appropriate noun phrase referent for each type of pronoun (e.g., subject, object, possessive) is identified.

John went to the movie. *He* was happy. ⧫
John went to the movie. *John* was happy.

Noun Phrase Reference:
Noun phrases which refer to the same person, object or concept are identified.

Mr. Brown came in.
The old guy was always on time. ⧫
Mr. Brown came in.
Mr. Brown was always on time.

Agent Inference:
The agent of an action is introduced.

The ball broke the window. ⧫
John threw the ball that broke the window.

Instrument Inference:
The instrument of an action is introduced.

Mary fixed the T.V. ⧫
Mary fixed the T.V. *with a screwdriver*.

Indirect Object Inference:
The receiver of an action is introduced.

John turned in his paper. ⧫
John turned in his paper *to the teacher*.

Object Inference:
The object of an action is introduced.

Mary read for several hours. ⧫
Mary read *her new book* for several hours.

Recover Passive Subject:
The agent of a reduced passive verb phrase is indicated.

The cake was baked last night. ⧫
The cake was baked *by John* last night.

Recover Words in Conjoined Sentences:
Words which have been deleted by conjunction deletion rules are indicated.

John rowed and Mary steered the boat. ⧫
John rowed *the boat* and Mary steered the boat.

Recover Complement:
The complement of the verb phrase is indicated.

Mary doesn't want to. ⧫
Mary doesn't want to *go home*.

Contextual Inference

Location:
A locational adverb is incorporated.

Tom was at the movie. Tom saw Bill. ⧫
Tom saw Bill *at the movie*.

Time:
A time adverb is incorporated.

John went to work on Saturday. Mary went to visit her mother. ⧫
Mary went to visit her mother *on Saturday*.

Time Relation:
The time relationship between two actions is indicated.

John went to work on Saturday. Mary went to visit her mother. ⧫
John went to work on Saturday *before* Mary went to visit her mother.

Complete Sentences:
The consequence of a single action or sequence of actions is indicated.

Tom went to work on Saturday. ⧫
Tom worked on Saturday.

Causation:
The motivation for a particular state or mood is incorporated.

Mother got mad. ⧫
Michelle made her mother mad.

Result:
The outcome of some situation is presumed.

John said Bill could take half. ⧫
Bill took half.

Prior Situation:
The situation prior to some action is assumed.

John said Bill could take half. ⧫
Bill did not have any ice cream and John offered Bill some.

Goal-Causation:
An explanation is given of some action which serves some purpose.

Michelle picked up the flowers. ⧫
Michelle picked up the flowers so her mother would not be mad.

Truth of For-to Complement:
The for-to complement portion of a sentence is assumed to actually be true or to take place.

Michelle wanted to run away. ⧫
Michelle did run away.

Statement of Ability:
A statement of capability is interpreted as actual ability within the context of the situation.

Bill was able to fix the car. ⧫
Bill fixed the car.

Truth of That-complement:
The that-complement portion of a sentence is assumed to actually be true or to take place.

Tom says that Mary cheats on her tests. ⧫
Mary cheats on her tests.

Pluralize Action:
The action of one person in a group is assumed to be copied by others.

John decided it was time to eat so he sat down to have lunch. ⧫
John and Mary sat down to have lunch.

Causation-Result:
Two related events are interpreted as a cause-effect sequence.

Michelle was watering the flowers when the pot fell to the floor and broke. ⧫
Michelle broke the flower pot.

Ordering:
A sequence between events is assumed.

Tom enjoys a good dinner and a movie now and then. ⧫
Tom enjoys having dinner and then going to a movie.

Request:
A statement of desire is interpreted as a request or even a command.

John said that he wanted an ice cream. ⧫
John told Bill to get him an ice cream.

Extension of If-then:
An *if* sentence is changed to an *only if* sentence.

John wants to go to the movie if Mary is going. ⧫
John wants to go to the movie only if Mary is going.

Proposition-Concept:
An action is assumed to be an instance of a concept.

The dog scared the girl. ⧫
Children fear small animals.

Thematic Inference

Characterize Action:
The purpose of action is clarified.

Michelle picked up the broken flower pot. ⧫
Michelle will make up for being naughty by cleaning up.

Episode Introduction:
A particular action is clarified as an introduction to a series of events.

Bill and Mary stopped at a restaurant. ⧫
Bill and Mary stopped at a restaurant to eat and have a conversation.

Theme:
The main idea for all or part of a story is indicated.

Let's clean up the mess. ⧫
Let's show we can be good kids and help the teacher.

Attempt:
A specific goal or desired result is attached to an action.

Peter fixed up the classroom. ⧫
Peter wanted to impress the teacher by fixing up the classroom.

Resolution:
An achieved goal is clarified.

Mary sewed the dress. ⧫
Now that Mary finished her dress, she could go to the dance.

Application of the Guidelines

Introduction

The reading task varies with the kind of reading material, since different kinds of texts have different linguistic and structural characteristics and are used for different purposes. Accordingly, the language editor's job varies with type of text. This section looks at four kinds of reading materials—newspaper reports, basal readers and trade books, documents and instructions, and television scripts—and describes the special concerns and challenges that each presents to the language editor. In the discussion of basal readers and trade books, it is assumed that the original texts will not be altered; therefore, this section explains how to use the guidelines to judge the appropriateness of a given story for deaf readers. The other three sections deal with texts that are more likely to be rewritten; accordingly, examples are offered of the application of the guidelines to the editing task.

This chapter discusses the vocabulary, syntax and inferential content characteristic of each kind of text noted above. By and large, although the vocabulary and syntax may vary widely from one kind of text to another, the guidelines for these two components of language may be applied in a straightforward fashion. But, as we have seen, the guidelines for inference are less clear-cut. Therefore, most of the comments in each section pertain to methods for clarifying implied meanings.

Editing News Reports

Introduction

For many deaf readers, newspapers are incomprehensible. News reports rely on a class of vocabulary words that may be entirely new to hearing-impaired students or used in an unfamiliar way. Moreover, the syntax in news stories is frequently too complicated for deaf readers. An analysis of a newspaper over a period of seven days revealed that 50% of the sentences on the front page and 25% of the sentences on both the front page and lead sports page were passive (Power, 1971; cited in Russell, Quigley, and Power, 1976). Yet, one syntactic study showed that nearly 40% of 18-year-old deaf students did not understand passive sentences (Power and Quigley, 1973; cited in Russell, Quigley and Power, 1976). This figure rose to 70% for agentless passives, a type that abounds in news reporting.

DOONESBURY by Garry Trudeau

SEE, RICK, IN ITS WAY, MELLOW-SPEAK IS A REMARKABLY ECONOMICAL DIALECT. WHAT DR. ASHER HAS DONE IS REDUCE LANGUAGE TO ONLY ITS MOST ESSENTIAL COMPONENTS..
HERE, I'LL SHOW YOU. GIVE ME A LINE TO TRANSLATE.
HOW ABOUT THIS.. "THE MOON LIKE A FLOWER IN HEAVEN'S HIGH BOWER, WITH SILENT DELIGHT SITS AND SMILES ON THE NIGHT."
WILLIAM BLAKE, RIGHT? OKAY, LET'S SEE.. IN MELLOW-SPEAK, THAT WOULD BE..
"OH, WOW, LOOK AT THE MOON."
DUANE, WE'VE GOT TO TALK.
5-16
GBTrudeau

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The Narrative Structure of News Reports

The final blow to comprehension is dealt by the narrative structure of news stories. Journalistic tradition has led to a style of news reporting that is often confusing to readers, even in the general population (Green, 1979). Green has found that journalism textbooks advocate several newswriting conventions which require the reader to do a great deal of inferencing and which result in poorly organized and unconnected reports. Among these techniques are the use of the *inverted pyramid* and the *block paragraph*.

The Inverted Pyramid

The inverted pyramid refers to a way of structuring reports in which the most important or most recent development is presented first as the lead paragraph, followed by background material given in no particular order. Events are therefore not ordered chronologically and the standard narrative form of setting plus episode is violated.

The rationale behind the inverted pyramid is that it caters to the needs of newspaper readers who don't want to search through long columns of text in order to find the most important development in a story. Since this information is given in the opening paragraph, the reader need only look at the beginning of the report to be updated. The newspaper editor's job is also much simpler when the inverted pyramid is used, since reports may be edited to any length merely by removing paragraphs. However, this convention often makes it difficult for the reader to sequence and make sense of the facts.

The following excerpt from a story in the *New York Times* illustrates the effects of the inverted pyramid. A great deal of information is packed into a relatively short space. This information is not ordered chronologically within paragraphs. There are numerous sources of confusion in this text, but the discussion below is limited to just those stemming from the use of the inverted pyramid.

Armed Forces Seize Control of Bolivia

LA PAZ, Bolivia, July 17 (AP)—The armed forces took control of Bolivia today, apparently to head off the expected choice of a leftist as the nation's democratically elected President.

The military uprising began early in the day in the northern city of Trinidad. Rebels later seized the Government Palace here and reportedly took the interim chief of state and her top aides captive.

The interim President, Lydia Geiler Tejada, who has been in office since last fall, was to be replaced by the winner of an election in Congress set for Aug. 4.

The insurgents, who said in a statement that they were resisting a "Communist assault" in Bolivia, were seeking to prevent Congress from choosing Hernan Siles Zuazo, a former President who received a plurality in a nationwide presidential election on June 29. Congress was given the task of choosing the president because no candidate won a clear majority in the voting last month.

One Dead in La Paz

At least one person was reported killed here as the rebels seized radio stations and a union headquarters. The airport and most offices in La Paz were closed. The streets of the capital were almost empty of civilians as armored cars surrounded the university and other military units spread through the city.

Two years ago, Mr. Siles Zuazo was blocked by military pressure from winning re-election to the Presidency, which he occupied from 1956 to 1960, when he was generally regarded as a moderate. Since then, he has shifted toward the left, and his backers now include militants of the Revolutionary Left Movement and what he has called Bolivia's "inoffensive" Communist Party.

(Excerpt from the *New York Times*, July 18, 1980)

A paragraph-by-paragraph analysis of this story shows the reasons for its complexity.

1. The armed forces took control of Bolivia today, apparently to head off the expected choice of a leftist as the nation's democratically elected President.

This paragraph talks of the motives behind the coup without naming the person at whom it was directed. The situation itself is inherently confusing: the reader probably assumes that the *expected choice* and the *democratic election* refer to the same process but, in fact, this is not the case.

2. The military uprising began early in the day in the northern city of Trinidad. Rebels later seized the Government Palace here and reportedly took the interim chief of state and her top aides captive.

This paragraph is relatively simple (although it is not clear whether *here* refers to Trinidad or La Paz).

3. The interim President, Lydia Geiler Tejada, who has been in office since last fall, was to be replaced by the winner of an election in Congress set for Aug. 4.

Here, *election* is used to refer to the congressional vote. But in the first paragraph the election alluded to is the popular vote. Therefore, the reader is likely to think that the election mentioned here is the same as the democratic election in paragraph 1.

4. The insurgents, who said in a statement that they were resisting a "Communist assault" in Bolivia, were seeking to prevent Congress from choosing Hernan Siles Zuazo, a former President who received a plurality in a nationwide presidential election on June 29. Congress was given the task of choosing the president because no candidate won a clear majority in the voting last month.

It is not until this paragraph that the precipitating incident in the chain of events leading to the coup is made explicit. Now the reader finally understands that two elections are being discussed, one held on June 29 and the other to be held on August 4. However, the first sentence of this paragraph is extremely complex. It introduces new information about the present, future, recent past, and far past, not in chronological order.

5. At least one person was reported killed here as the rebels seized radio stations and a union headquarters. The airport and most offices in La Paz were closed. The streets of the capital were almost empty of civilians as armored cars surrounded the university and other military units spread through the city.

This paragraph picks up the story line back in paragraphs 1 and 2 by giving more details about actions taken in the coup.

6. Two years ago, Mr. Siles Zuazo was blocked by military pressure from winning re-election to the Presidency, which he occupied from 1956 to 1960, when he was generally regarded as a moderate. Since then, he has shifted toward the left, and his backers now include militants of the Revolutionary Left Movement and what he has called Bolivia's "inoffensive" Communist Party.

Here the narrative continues with the chronology begun in paragraph 4. It explains the communist threat mentioned there and the motivation for the coup mentioned in paragraph 1.

A report written in chronological order would be organized entirely differently from this one. The paragraphs would occur in the order 6, 4, 3, 1, 2, 5, with reordering of information within the sentences of each paragraph.

The Block Paragraph

Another journalistic device, the block paragraph, is an independent pragraph which may be deleted by the editor without affecting the sense of the remaining story. Like the inverted pyramid, this device serves the newspaper editor's need to shorten a report quickly according to the space available for it by deleting paragraphs here and there. Therefore, the block paragraph must not contain logical connectives such as *meanwhile*, *later*, and *however*, which cause the reader to refer to preceding paragraphs for meaning, since these preceding paragraphs may be deleted in the final edition. This leaves the burden of providing such connections to the reader, and further reduces flow and cohesion within a story.

Aggravating the effect of the block paragraph, writers keep paragraphs short; many are only one sentence long. This practice allows the editor further flexibility and convenience in deleting material and also makes the final copy less dense and therefore more inviting to the eye. But it removes one more clue to the structural organization of the report; paragraphs tell the reader that the sentences included within them re related. In a series of connective-less, one- or two-sentence block paragraphs, the structural organization of the report may not be readily apparent.

The following excerpt shows the effects of the block paragraph, as well as the inverted pyramid.

Few Strikes in E. Europe
Control is Usually Tight

Reuter

VIENNA—Polish workers, involved in widespread strikes for the third time in 10 years, have grasped a highly sensitive weapon that has been used sparingly by their East European neighbors.

Nowhere else in region *(sic)* has collective bargaining been developed to such an extent and been used with such effect as in Poland, whose citizens have a long history of resisting authority.

A wave of labor unrest that broke out in Poland on July 1, initially over higher meat prices, has spread to include a strike by thousands of workers.

Other Communist governments are no doubt anxiously watching development in Poland, but there are no signs yet that they are feeling any ripples from the unrest.

When Polish workers protested in 1970 and 1976, it was business as usual in the rest of the region, though many workers doubtless knew of the situation through foreign radio stations.

Elsewhere in Eastern Europe, where control is tighter, industrial action appears limited to occasional brief work stoppages over non-political bread-and-butter issues. News of these disputes only occasionally leaks out in a system in which the worker theoretically owns the means of production, and is therefore striking against himself.

In a recent reported stoppage in the giant Togliatti car factory in the Soviet Union, the grievances appear to have been lack of supplies in the shops, particularly meat and other food. Authorities denied the stoppage had taken place.

(Excerpt from story in *The Boston Globe*, August 18, 1980)

There are few connections between ideas in this story; each paragraph seems to be introducing new information that is not explicitly related to other parts of the report. For example, in the first paragraph, we learn that Polish workers have found a new weapon. Readers do not know whether the word *weapon* is being used here in a literal or figurative sense. In the second paragraph, we are told that collective bargaining is being used effectively in Poland. It is up to us to infer that the sensitive weapon is collective bargaining. This inference would be simpler for all readers to make if the two sentences were included in the same paragraph, since then we would be looking for a connection between them. Likewise, the third, fourth and fifth paragraphs might be combined as illustrated below, slightly modified by adding connectives and reordering information.

The latest outbreak of labor unrest in Poland, which began in July over high meat prices, has spread to include a strike by thousands of workers. But there are no signs yet that other Communist countries are feeling any ripples from the unrest, although their governments are no doubt anxiously watching developments in Poland. A similar situation prevailed when Polish workers protested in 1970 and 1976; it was business as usual in the rest of the region, though many workers doubtless knew of the situation through foreign radio stations.

And finally, the last two paragraphs might also be combined for a more coherent report.

Techniques for Editing News Reports

The following edited versions of news reports demonstrate techniques for increasing the readability of news stories for deaf students. These include reordering information, setting the scene, clarifying referents and clarifying motives.

Reordering Information

The events in a report should be reordered to follow a chronological sequence. It is helpful to provide a title which tells the most recent development; this signals the purpose of the report to the reader.

Setting the Scene

News reports usually assume that the reader has a certain amount of background knowledge about the subject matter. For hearing-impaired students, this may not be the case, and therefore they may not be able to draw the contextual inferences necessary for understanding. Edited news stories should fill in some background information.

Clarifying Referents

It is common in journalism to provide the name of an individual or agency several sentences after it has been described in general terms. This practice requires the reader to infer a connection between the two. A report is more easily understood if a specific name is used immediately.

Clarifying Motives

One class of contextual inference is made explicit by explaining the motives of leading figures in the story.

In the following examples, all of these techniques interact to produce reports that are more easily understood by deaf readers. They are all edited at Level 2 or 3 because of the nature and complexity of the material. It is assumed that the concepts found in newspaper stories are too sophisticated for Level 1 readers.

1. Original Version:

Some American hostages are still being held in the United States Embassy, despite claims they were taken away and hidden in towns across the country, a source at the headquarters of Iran's revolutionary guards said yesterday. This report contradicted claims by the militants holding the embassy that all 53 Americans taken captive in the embassy November 4 were dispersed to 15 cities to foil another rescue attempt like the United States helicopter mission that failed in April.

(*New York Times*, June 16, 1980)

Edited Version (Level 2)

SOME HOSTAGES MAY STILL BE IN EMBASSY

On April 24, a group of United States soldiers tried to rescue the 53 American hostages from the United States Embassy in Iran. This means the United States soldiers tried to free the hostages. The United States soldiers tried to bring the hostages back to the U.S. But President Carter stopped the rescue because there were many problems with it. The hostages didn't leave Iran. Iranian students are still keeping the hostages. The students didn't want the U.S. to try to rescue the hostages from the embassy again. They said they were taking the hostages out of the embassy. The students said they were moving the hostages to 15 different cities in Iran. Yesterday, an Iranian official talked about the hostages. The official said some of the hostages are still in the embassy. The official said the students did not move all the hostages to 15 different cities.

2. Original Version:

An importer of Saab cars agreed to pay up to $1 million in compensation to owners of compact cars. The agreement concerns poor paint jobs which have shown to blister or flake on some 1,100 cars. The Massachusetts Attorney General's office says SAAB-Scania of America, Inc., has also agreed to mail notices to drivers who own the cars warning them about the possible problems.

(UPI, July, 1979)

Edited Version (Level 3)

PAINT PROBLEMS ON SAAB CARS

SAAB-Scania of America, Inc., sells Saab cars. 1,100 cars have a problem with paint. The paint comes off in small pieces. SAAB-Scania has agreed to pay the 1,100 Saab owners almost $1 million because the paint is bad. SAAB-Scania will give each of the 1,100 owners part of the $1 million. The Massachusetts Attorney General's office says that SAAB-Scania will send letters to Saab owners. The letters will warn people about the paint problem.

3. Original Version

President Carter has decided to approve the shipment of 38 tons of nuclear fuel to India, reversing a ruling by the Nuclear Regulatory Commission, White House officials said yesterday. Under the law, Congress had 60 days in which it can reverse Mr. Carter's action, and a strong Congressional effort to do so is expected.

(*New York Times*, June 19, 1980)

Edited Version (Level 3)

CARTER DECIDES TO SEND NUCLEAR FUEL TO INDIA

India wants to buy 38 tons of nuclear fuel from the United States. The Indian Government says it will use the nuclear fuel to make nuclear energy. But many United States Government officials don't believe the Indian Government. The U.S. officials are worried that India may make nuclear bombs with the nuclear fuel.

On May 16, the Nuclear Regulatory Commission (NRC) talked about the nuclear fuel. The NRC is a group of people in the United States. The people know a lot about nuclear fuel and nuclear fuel laws. The NRC said the United States should not send the nuclear fuel to India. But yesterday, President Carter decided to send the nuclear fuel to India anyway. Carter says this will help the United States and India be better friends. The United States Congress will probably try to stop Carter.

4. Original Version:

King Hussein of Jordan arrived yesterday for talks with President Carter aimed at persuading the King to join Egypt and Israel in the Middle East peace talks. King Hussein was scheduled for two days of meetings with Mr. Carter at the White House.

(UPI, June 17, 1980)

Edited Version (Level 2)

KING HUSSEIN AND
PRESIDENT CARTER MEETING

There is fighting in the Middle East. Egypt, Israel and Jordan are 3 countries in the Middle East. Egyptian and Israeli leaders will have special Middle East peace meetings. They will try to stop the fighting in the Middle East. King Hussein is the leader of Jordan. He does not want to go to the peace meetings. Yesterday King Hussein arrived in Washington, D.C. He is meeting with President Carter for 2 days. President Carter wants King Hussein to go to the peace meetings. Maybe President Carter can make King Hussein change his mind about the peace meetings. Then King Hussein would go to the meetings.

5. Original Version:

The Supreme Court ruled yesterday, 5 to 4, that new forms of life created in the laboratory are eligible for patents under current patent law. The decision, upholding the award of a patent for a new bacterium that "digests" oil spills, opens the way for patent protection for the rapidly burgeoning field of genetic engineering.

(*New York Times*, June 17, 1980)

Edited Version (Level 3)

SCIENTISTS CAN GET PATENTS
FOR NEW KINDS OF LIFE

If a person invents a new thing, then that person can get a patent from the United States Government. The patent means that this person can make the new thing for 17 years. This person can sell the new thing and earn money. No other people can make or sell the new thing for 17 years.

Until yesterday, patents were for non-living things. Non-living things are not alive. Some non-living things are cookies, lights, door-bells, Coca-Cola and Levis. Yesterday the Supreme Court of the United States made a new rule about patents. It decided that people can get patents for living things. Scientists are inventing some new living things. These new living things are very, very tiny plants that eat oil from oil spills. Now scientists can get patents for the plants. They can sell the plants and earn money. Now maybe other scientists will try to invent new living things.

6. Original Version:

Space scientists shuffling through heaps of pictures report they have evidence of another satellite of Jupiter, the planet's 15th confirmed moon. Dr. E.C. Stone, with the Voyager project at the Jet Propulsion Laboratory in Pasadena, California, reported photos of Jupiter returned in March, 1979, show the image of a small moon only 50 miles in diameter locked in orbit around the planet. The pictures were transmitted to Earth as Voyager I made its close approach to Jupiter.

(*New York Times*, May 7, 1980)

Edited Version (Level 2)

SCIENTISTS FIND
15TH MOON OF JUPITER

Jupiter is a planet. It moves around the sun. It has moons. The moons are smaller than Jupiter. The moons move around Jupiter. Before, scientists thought Jupiter had 14 moons.

Last year, a satellite traveled near Jupiter. A satellite is like a rocket. There was a camera inside the satellite. The camera took many clear pictures of Jupiter. In California, scientists looked at the pictures. The scientists counted a new small moon in the pictures. This small moon is the 15th moon of Jupiter.

Evaluating Basal Readers and Trade Books

Introduction

Most of us have probably watched an adult reading a story to a very young hearing child and marveled that this child would bother to listen to something s/he could not possibly understand. Yet little children seem to enjoy hearing stories even though the words and ideas expressed in them may be well beyond their comprehension. And no doubt these experiences, as well as experience with simpler stories within their grasp, contribute to their eventual understanding of complicated stories.

Most preschool deaf children do not have opportunities to hear stories. Generally, the deaf child's first story experiences are probably as a reader rather than a listener and occur much later in life. Even for the exceptional deaf child to whom stories are read at an early age, this experience is fundamentally different from that of the hearing child. Small hearing children are usually told stories in a setting where they can look at the illustrations in a book. These illustrations may help to explain the plot as much as the spoken words do. At least they serve to hold the child's attention. Therefore, the appeal of early stories for hearing children may rest as much in the opportunity to look at interesting pictures as it does with the chance to hear an interesting plot unwind. But when stories, whether signed or spoken, are told to hearing-impaired children, they are not able to look at pictures and receive the narrative at the same time. No one knows how this affects the story "listening" experience.

As discussed in the preceding chapters, in virtually every area and at every stage of language development, the hearing child has a far more formidable linguistic base to work from than the prelingually deaf child. Accordingly, the hearing child brings far more skills to first story experiences, spoken or written, than the deaf child. Yet almost all stories used with deaf children are written for hearing children. Therefore, the person responsible for choosing stories for the deaf child must pay special attention to their complexity and be aware of areas of potential confusion. In short, the deaf child's first experiences with stories should be successful so that s/he can build positive attitudes toward reading.

This section describes some of the characteristics of children's fiction trade books (non-educational story books) and basal readers, which are designed for hearing children. The multi-level system can be a useful tool for judging the appropriateness of stories from both sources for deaf students. It is especially important that basal readers be chosen appropriately since they are so commonly used in the education of deaf children. In over 70% of 507 programs for hearing-impaired students surveyed nationally, basal reading series were the primary or supplementary method of reading instruction (La Sasso, 1978). With the ability to evaluate the difficulty of vocabulary, syntax and inferential content, teachers can choose pre-existing stories for the deaf student to read with understanding and enjoyment.

Evaluation of Vocabulary

Vocabulary in trade books is largely uncontrolled. Stories may contain especially hard words that are pertinent to the plot. However, evaluating the difficulty of vocabulary in trade books is a relatively simple matter of consulting word lists. Illustrations may be helpful in explaining words that are above grade level. In contrast, vocabulary in basal readers is more strictly controlled; these books are in fact the source for word ranking on a number of standardized word lists (see page 1 in Vocabulary chapter).

Evaluation of Syntax

Neither trade books nor basal readers strictly control the syntactic structures of the sentences used in them, although basal readers do control the mean length of sentences, which in turn exerts some degree of control over syntactic complexity. The table on page 74, based on research cited in Russell, Quigley and Power (1976), describes the frequency of occurrence of certain syntactic structures in one reading series, *Reading for Meaning* (Houghton Mifflin, 1966). This series includes three primers and eight readers up to the sixth grade level. The table makes it clear that syntactic structures which are problematic for the deaf reader occur early and frequently in reading series. Therefore, particular care must be taken to find stories that contain a manageable number of such structures for the student.

Frequency of Occurrence of Selected Syntactic Structures in the *Reading for Meaning* Series

	First Appearance	Further Usage
Pronominalization	First primer	Occurrence so frequent that no analysis made
Negation	First primer	Consistently in successive books
Question Formation:	First primer	8/100 sentences in third primer and first reader
Yes/No Questions		
WH-questions	Second primer	11/100 sentences in second and third primers
Conjunction:	First primer	Consistently in successive books
Noun Phrases and Verb Phrases		
Sentences	First grade reader	Increasing frequency in successive books
Adjectives and Adverbs	First grade reader	Consistently in successive books
Relative Clauses	Second grade reader	Increasing frequency in successive books
Complements:	First primer	Increasing frequency in successive books
Infinitive		
That-complements	Fourth grade reader	At least 21/100 sentences in fourth, fifth and sixth grade readers
Participial	Second grade reader	Increasing frequency in successive books
Passivization	First grade reader	Increasing frequency in successive books

Evaluation of Inferential Content

The Development of Narrative Structure

In Chapter 3, the role of thematic inference, or story grammar, in understanding discourse was discussed. The simplest story structure was defined as one with a setting component and a five-part episode consisting of an initiating event, internal response, attempt, consequence and reaction. The ability to draw thematic inferences, to recognize the function of each component and integrate it into the whole, plays a crucial role in understanding narratives.

There is some experimental evidence which supports the psychological reality of the story grammar model. When children are told stories in which components are inverted, they do not remember them as well as stories told in the correct sequence. If they are given all of the component statements in random order, they will sequence them as predicted by the model (Stein, 1978; cited in Johnston, 1980). When given stories with various components missing, they tend to fill in the gaps with the correct kind of information. The exceptions to this are when the initiating event and consequence are deleted (Stein and Glenn, 1977).

There is also evidence that this model is learned as the child matures. A number of studies (Clandy, 1979; Kernan, 1977; Stein and Glenn, 1977; Stein and Glenn, 1979; and Umiker-Sebeok, 1979; cited in Johnston, 1980) agree that stories created by older children are more likely to have the following characteristics, in comparison to younger children's stories:

- less extraneous detail
- fewer unresolved problems and unprepared solutions
- more overt markings of changes in time and place
- more introductory informaton; e.g., information about setting
- greater concern with the motivations and internal reactions of the character
- more complex episode structure
- closer adherence to the story-grammar model.

We may generalize from this research that just as children's ability to create narratives develops over time, so does their ability to understand stories that they hear or read.

Limitations of Readability Formulas

The difficulty of trade books and basal readers has traditionally been rated by readability formulas (Dale and Chall, 1948; Fry, 1969; Harris and Jacobson, 1975). However, these formulas consider only the length of sentences and difficulty of vocabulary. They do not take into account the inferential content of stories, including story structures, that may present problems for children (Steinberg and Bruce, 1980).

Bruce and Rubin note that readability formulas may assign trade books for elementary school children to lower grade levels than they in fact should be. Even though the words in a book may be simple and the sentences short, the story structure might present difficulties which children in the targeted age range cannot handle. An example they cite is *Don't Forget the Bacon* (by Pat Hutchins, New York: Greenwillow Books, 1976). Readability formulas place this book between first and second grade level. But several third and fourth graders interviewed by Bruce and Rubin found the book difficult to understand. The story is about a boy whose mother sends him shopping. On the first page she is pictured holding out a basket and coin purse. Her instructions to the boy, given in a cartoon balloon over her head, are "Six farm eggs, a cake for tea, a pound of pears, and don't forget the bacon." On the next page the little boy is carrying the basket and purse down the street. He sees three fat people standing on the corner and he thinks, as shown in cloud shape, "Six fat legs, a cake for tea, a pound of pears, and don't forget the bacon." On the next page, he sees a boy with a cape, and misremembers his list a second time; "Six fat legs, a cape for me, a pound of pears, and don't forget the bacon." The book continues in this way through the shopping list. The story consists almost entirely of the boy's thoughts.

Neither the words nor the sentences in this book are especially difficult. It is the structure of the story that is problematic. First, the book relies on pictures to communicate much of its information; the things the boy sees which cause him to misremember are not explicitly stated but only pictured. It is left to the reader to infer the cause and effect relationship between the seen object and the incorrect item on the shopping list. Secondly, a great deal of the enjoyment

of the book comes from appreciating the symmetrical structure of forgetting the items one by one and misremembering them on the basis of rhyming words. And finally, the reader must understand the conventions of balloons and clouds as representing spoken words and thoughts, respectively. All three of these features may not be understood by the first or second grade reader.

Teachers of the deaf often rely on standardized reading tests to determine which grade basal reader their students should use. These readers have been written according to readability formulas. Yet the following excerpts indicate that these ratings are not necessarily a reliable guide in choosing materials at the appropriate level for deaf students. The first example, the opening paragraph of the story "Candy for Dinner," comes from the first half of the second grade reader in the Scott Foresman series *The New Open Highways* (1974).

> Tom gave the ball to Mickey. "I have to go home now," Tom said. "Dad is bringing Candy for dinner." Mickey thought, "Candy for dinner. I wonder what kind it will be."

The story continues with Mickey going to Tom's house for dinner. Tom's father introduces his dinner guest, a little girl he calls Candice. Mickey eagerly awaits through the meal for candy to be brought out. The story ends when dessert is served and Tom's mother says, "Mickey, I thought you and Candy would like this dessert." Only then does Mickey realize that the word *candy* has a double meaning.

Although this story is ranked at the second grade level, its structure is not simple. No setting is provided. The reader is not told who Tom and Mickey are, or that they are friends rather than, say, brothers. The reader is obviously thrown into the middle of an ongoing story, as indicated by the use of the definite determiner with *ball* in the first sentence. Furthermore, the initiating event—"Dad is bringing Candy for dinner"—and Mickey's internal response to it—"I wonder what kind it will be"—have as their basis a linguistic phenomenon: double meaning. Appreciation of the story depends on an understanding of this double meaning that many deaf children using second grade reading books may not have.

In contrast, the fourth grade reader from this same series contains "The Story of Mulberry Bend," with the following introduction:

> This is a story about a man named Jacob and a place called Mulberry Bend. It is a true story that happened in New York City. It happened in the year 1888.
>
> Jacob and his wife, Elizabeth, lived in a little house. They had two daughters, Kate and Clara.

Here, the characters and their relationship to each other and the place and time of the setting are explicitly presented. The plot concerns external events rather than linguistic ambiguity: Jacob brightens the lives of slum children by bringing them flowers. Readability formulas would rate "Candy for Dinner" as simpler than "Mulberry Bend" on the basis of its simpler syntax and vocabulary. Yet the former's more difficult story structure might make it harder for children to understand.

The lack of setting in "Candy for Dinner" may be due to an effort to keep the story short enough for second grade readers. But brevity in and of itself may not be a virtue when it causes the standard form of a story to be violated. An extreme example of the pitfals of brevity is seen in "Catching Fish," a story in the first grade reader of Lippincott's *Basic Reading* series (1963). The entire story is reproduced here.

> A big black bear is fishing in the lake. He is standing near the shore where the lake is not deep. The bear is smacking his lips. He is thinking how the fish will taste when he eats them.
>
> The bear is catching more fish than he can eat. When he is full of fish, he will leave the rest on the shore. A fox or mink will come and eat them.

The problem here is that nothing happens. The story has no structure. There is no episode—no initiating event, no attempt to achieve a goal, no consequence. It is really not a story at all, but rather a short description of an animal engaged in an activity. In fact, the purpose of this story is not to involve the reader in the content, but to practice the *-ing* sound. It illustrates the dangers of selecting stories for deaf students that were originally written to teach specific sounds or syntactic structures to hearing youngsters. Such contrived narratives may be so lacking in tension, conflict, and interest that they bore the reader.

Editing Documents and Instructions

Documents and instructions written for the general population pose a particularly important problem for prelingually deaf readers, since the information contained in them is often crucial for health, safety or compliance with the law. Comprehension may be especially low in legal and medical materials, which are notoriously confusing even for good readers.

The vocabulary in documents and instructions frequently is very difficult for hearing-impaired readers. It is often technical and unfamiliar, since it is highly specific to the content. Sentences are often long and their syntax complex. Readers frequently are unable to draw appropriate inferences because the subject matter is foreign to them.

The following examples demonstrate difficulties with documents and instructions and the way that editing of vocabulary, syntax and inference combine to produce more readable versions.

Example 1: Driver's Manual

Bureaucratic publications are typically longwinded and bombastic. This offering from the Commonwealth of Massachusetts is a good example.

Original:

What is required of an operator when approaching and passing a school bus which has stopped to allow passengers to alight from or board the same?

When approaching a vehicle which displays a sign bearing the words "SCHOOL BUS" and is equipped with front and rear alternating flashing red signal lamps which are flashing, as provided in section seven B, and which has stopped to allow pupils to alight from or board the same, a person operating a motor vehicle shall, except when approaching from the opposite direction on a divided highway, bring his vehicle to a full stop before reaching said school bus and shall not thereafter proceed until the warning signals are deactivated.

(A divided highway is any way with an island, curbing or barrier intended to prevent turning except at intersections.)

(Driver's License Manual, Commonwealth of Massachusetts, 1979)

The vocabulary here is unnecessarily difficult: a driver is an *operator*; flashing lights are *alternating flashing red signal lamps*; the bus is referred to as *the same* and *said school bus*; lights are not simply turned off but are *deactivated*. The syntax is extremely complicated. The answer to the question consists of a paragraph made up of a single long sentence with over a dozen shorter sentences embedded in it, as the detailed analysis in the following table shows.

1. When approaching a vehicle	adverb clause
2. which displays a sign	first part of conjoined relative clause on the noun *vehicle*
3. bearing the words "SCHOOL BUS"	relative clause on the noun *sign*
4. and is equipped with front and rear alternating flashing red signal lamps	second part of conjoined relative clause on the noun *vehicle*, in the passive voice
5. which are flashing	relative clause on the noun *lamps*
6. as provided in section seven B	passive adverbial clause on the entire preceding clause (beginning with *when*)
7. and which has been stopped	third part of conjoined relative clause on the noun *vehicle*, in the passive voice
8. to allow pupils	infinitive complement of the verb *stopped*
9. to alight from or board the same	alternating infinitive complement
10. a person	subject of the main clause, which begins here
11. operating a motor vehicle	relative clause on the noun *person*
12. shall	auxiliary verb of main sentence
13. except when approaching from the opposite direction on a divided highway	adverbial clause embedded in the verb phrase of the main clause
14. bring his vehicle to a full stop	first part of conjoined verb phrase of the main clause
15. before reaching said school bus	adverbial clause in main verb phrase
16. and shall not thereafter proceed	second part of conjoined verb phrase of the main verb phrase
17. until the warning signals are deactivated.	passive adverbial clause within main verb phrase

Closer inspection reveals that the overall organization of the passage is partly responsible for the very complex syntax. The situation under discussion is partially described in the question portion (although the crucial factor of the flashing lights is not included there), and then this information is reiterated in the response, adding unnecessarily to its length. The actual answer appears at the end of the sentence, which faint-hearted readers might never reach before giving up in frustration.

To clarify and shorten the text, the situation should be fully described in the question portion, and only the answer given in the response. The organization could be made clearer still by use of the labels *question* and *answer*. And finally, the impersonal terms *operator* and *a person* could be replaced with the less formal *you* in order to involve the reader in the explanation.

There are two other disruptive features in this example. First, the exceptional situation in which the driver is approaching the bus from the opposite direction on a divided highway interrupts the response. But then the definition of *divided highway* doesn't occur until the end of the section. It would simplify matters to remove his exceptional case from the response and mention it in a separate paragraph, with a definition of *divided highway*, later on. Secondly, "section seven B" does not appear anywhere else in the manual. Since this detail would be important only to those avid followers of the motor vehicle code who tracked the reference down in other documents, it can safely be eliminated from an edited version.

Edited Version (Level 3):

Question: While you are driving your car, you see a school bus. The school bus has stopped to let people get on and get off. There are red lights on the front and back of the school bus. The red lights are flashing. What should you do?

Answer: You should stop your car before you come to the school bus. Wait until the bus lights stop flashing. Then you may start to drive again.

(Some roads are divided highways. Divided highways have a fence, curb or grass in the middle. Cars cannot drive across the fence, curb, or grass. If you are driving on one side of a divided highway and a school bus is on the other side, you do not need to stop.)

Example 2:
Instructions on an Aspirin Bottle

Original:

For Relief of Minor Headaches and Neuralgia.
Adults:
1 or 2 tablets with water every 3 or 4 hours, 5 or 6 times daily as required.
Children 10 to 16 years—1 tablet; 6 to 10 years—½ tablet; 3 to 6 years—¼ tablet. For children under 3 years of age, consult your physician.
CAUTION: If pain persists or recurs, be sure to consult a physician.

Since an aspirin bottle label is very small, there is no room for convoluted sentence structure. Therefore, the main task here is not one of simplifing complex syntax, but rather of adjusting vocabulary and filling in inferred meanings. Changing the format helps to reduce the amount of inferencing required.

Edited Version (Level 3)

Aspirin helps stop headaches and pain. Take aspirin with water. Too much aspirin can be dangerous for you. Do not take too much aspirin.

For adults, take 1 to 2 aspirin every 3 or 4 hours.
For children 10 to 16 years old, take 1 aspirin every 3 or 4 hours.
For children 6 to 10 years old, take ½ aspirin every 3 or 4 hours.
For children 3 to 6 years old, take ¼ aspirin every 3 or 4 hours.

Do not give aspirin to children younger than 3 years old. Ask your doctor what to do instead.

WARNING: Do not take too much aspirin. If pain does not go away or keeps coming back, go to your doctor.

Example 3: Legal Notice

A tenant would receive the following *Notice to Quit* prior to receiving an eviction notice. Many prelingually deaf people reading it would be hard-pressed to know just what the problem was.

Original:

NOTICE TO QUIT FOR NON-PAYMENT OF RENT

_____ 19 _

TO _____

_____

Your rent being in arrears, you are hereby notified to quit and deliver up in FOURTEEN DAYS from receipt of this notice the premises now being held by you as my tenant namely:

_____

_____

_____

If you fail to so vacate, I shall take due course of law to eject you.

PLEASE NOTE

ANY MONIES TENDERED BY THE TENANT AND ACCEPTED BY THE LANDLORD OR THEIR AGENT AFTER RECEIPT OF THIS NOTICE ARE ACCEPTED FOR USE AND OCCUPATION ONLY AND NOT AS RENT AND WITHOUT IN ANY WAY WAIVING ANY AND ALL RIGHTS UNDER THIS NOTICE TO QUIT FOR NON-PAYMENT OF RENT OR UNDER ANY SUBSEQUENT SUMMARY PROCESS PROCEEDING. THE LANDLORD HEREBY RESERVES THE RIGHT TO ACCEPT MONIES HEREUNDER WITHOUT REESTABLISHING ANY NEW TENANCY.

YOU ARE NOTIFIED TO PRODUCE AT THE TRIAL OF ANY SUBSEQUENT SUMMARY PROCESS ACTION OR AT ANY CONTINUANCE THEREOF THE ORIGINAL OF THIS NOTICE TO QUIT FOR NON-PAYMENT OF RENT.

RENT DUE: PERIOD OF TIME: _____

Address _____

Telephone Number _____

N.B. IF YOU HAVE NOT RECEIVED A NOTICE TO QUIT FOR NON-PAYMENT OF RENT YESTERDAY OR THE DAY BEFORE, YOU HAVE FOURTEEN DAYS FROM THE DATE OF RECEIPT OF THIS NOTICE TO VACATE YOUR LANDLORD'S PREMISES. IF YOU HAVE RECEIVED A NOTICE TO QUIT FOR NON-PAYMENT OF RENT YESTERDAY OR THE DAY BEFORE, YOU HAVE ONLY TEN DAYS FROM THE DATE OF RECEIPT OF THAT NOTICE TO PAY YOUR RENT.

Note that the landlord's rights are explained in large print in the center of the document, while the tenant's rights and responsibilities are explained at the bottom in fine print. The edited version should give primary importance to an explanation of actions the tenant must take.

Edited Version (Level 3):

This paper is called a NOTICE TO QUIT FOR NON-PAYMENT OF RENT

Date: _____

TO: _____

Address: _____

_____

Telephone: _____

You did not pay your rent money to the landlord on time. You owe the landlord $_____ for _____ months of rent.

Is this the first NOTICE TO QUIT FOR NON-PAYMENT OF RENT that the landlord has sent you in the past 12 months?

If YES:

Then you may pay your rent within 10 days from _____
today's date

If you pay the rent within 10 days, you may stay in your apartment.

If you wait more than 10 days to pay your rent, then you must move out of your apartment within 14 days from _____
today's date

If you do not move out within 14 days, then the landlord will make you go to court. The landlord will ask the court to make you move.

If you send money to the landlord, the landlord may accept it. But this does not mean you may keep living in your apartment.

If you go to court, bring this paper with you.

If NO:

Then you must move out of your apartment within 14 days from _____.
today's date

If you do not move out within 14 days, then the landlord will make you go to court. The landlord will ask the court to make you move.

If you send money to the landlord, the landlord may accept it. But this does not mean you may keep living in your apartment.

If you go to court, bring this paper with you.

Example 4: Driver's Manual

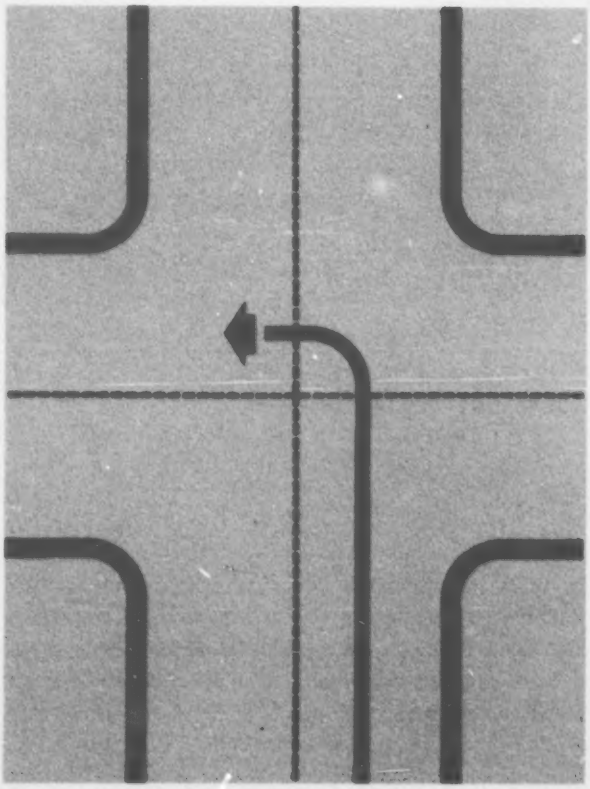
Finally, the following paragraph is a forceful reminder that a picture is sometimes worth a thousand words.

Original:

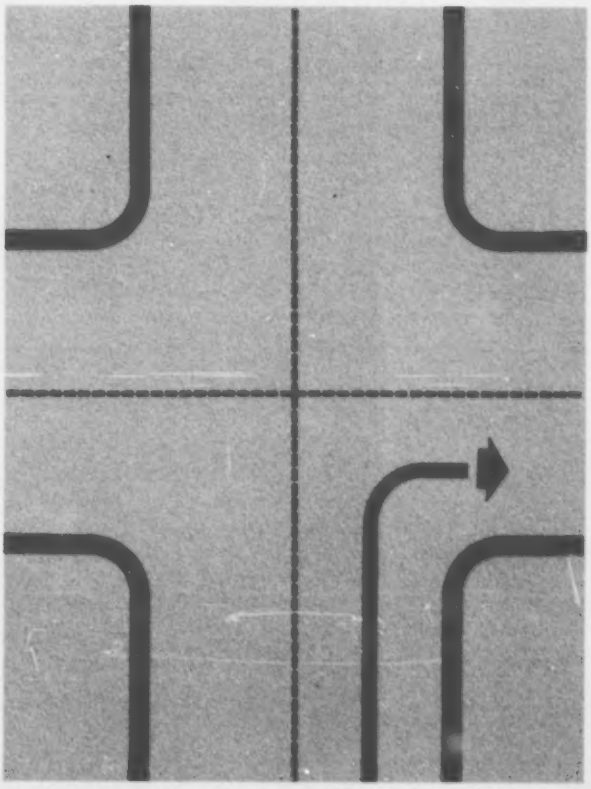
How must turns be made at intersections?
In preparing for a left turn on a two-way street an operator shall do so in the lane to the right of and nearest to the center line of the roadway and the left turn shall be made to the right of the center line of the entering way where it enters the intersection. In preparing for a right turn an operator shall keep to the right (as close as possible to the right curb) throughout his complete turn.

Edited Version:

To make a left turn:



To make a right turn:



Editing Television Scripts

Characteristics of Caption Reading

Reading text on paper is a substantially different task from reading captions on television. Many of the challenges of reading in the latter situation stem from the impermanence of caption display: captions are fast-fading and therefore the reader's rate is dictated by the amount of time each caption remains visible. As a result, it is impossible to refer back to preceding text. Looking back during ordinary reading allows the reader to integrate material, correct misunderstandings, and recall previous information. Without this capability, the caption reader's task is made more difficult.

A second difference between the two formats lies in the fact that television provides constantly changing video behind the captions. The video may be an advantage or a disadvantage to the caption reader. It may be helpful, since frequently the video explains the situation even if the reader has difficulty understanding the language in the captions. It represents a disadvantage when it competes with captions for the viewer's attention.

The two formats also challenge the language editor in different ways. In regular text editing, amount of reading time is not constrained and the editor frequently has the luxury of teaching concepts and the meanings of unfamiliar terms within the text itself. In television captioning, where display time is strictly controlled, the captioner must find a way to convey a great deal of information in a very short amount of time. Crucial decisions must be made about which parts of the original script to delete in the editing process.

Non-linguistic Parameters of Caption Writing

The vocabulary, syntax and inference guidelines apply equally well to permanent text and captioned text. However, television introduces many elements which are not found in print and which demand further attention from the captioner. Whereas print primarily uses words to transmit information, television relies on action, facial expression, rhythm and tone of voice, and sound effects to convey meaning. It is important that the captioner understand the interaction between the medium and the text, recognize information communicated nonverbally, and work within the constraints that the program format places upon caption design.

It is impossible to present guidelines regarding the non-linguistic parameters of good captioning in any order of priority. Their incorporation must be intuitively controlled in accordance with individual program formats. Many problems are program-specific and many factors interdependent. If these elements are not considered or understood by the person preparing a captioned program, it will be difficult to read and frustrating to watch.

This chapter presents an array of non-linguistic considerations and pitfalls for the captioner. The first part deals with the timing of captions: the rate at which captions should appear to allow sufficient reading time, and the ways in which the presentation times of captions communicate important information. Next, the spatial placement of captions is discussed. Finally, special effects; e.g., animated displays, colorized captions and various type styles, are considered for enhancing captioned presentations.

Timing Considerations

The WGBH Caption Center has a computerized captioning system that can read and respond to SMPTE (Society of Motion Picture Technicians and Engineers) time code. This capacity permits control of the display times of each caption with accuracy to 1/30th of a second.

Reading Rate:

Captions need to remain on the screen long enough for the average viewer to read them comfortably and to have some additional time to scan the video. If the viewer has barely enough time to read the captions, one of two possibilities may occur: the viewer will read continually and miss important visual information, or the viewer will choose to watch the video and ignore many of the captions. Obviously, neither of these situations is desirable.

Children's television programming is not produced with captioning procedures in mind and thus the dialogue flows without regard for the needs of the deaf caption reader. When caption rate is controlled, or a word-per-minute formula is implemented, then it is necessary to condense the original script. The slower the captions, the more condensation is necessary.

A series of studies has been carried out in order to determine an optimum caption rate. In the first study (Braverman and Hertzog), students enrolled in schools for the deaf viewed a one-half hour commercial television program captioned at 60, 90, and 120 words per minute and at Levels 1 and 3. The information that was transmitted was the same for all three rates, although the linguistic form varied according to the guidelines for each level. The results showed that caption rate did not affect comprehension of the program, even when the language of the captions was more complex. In the second study (Braverman, 1980a), deaf students viewed another commercial television program captioned at 90 and 120 words per minute. At the faster rate, the information density was increased so that this program had more captions. The results again indicated that students could comprehend at a rate of 120 words per minute, even under "high density" conditions.

It seems appropriate, then, to revise the rate of 60 words per minute based on earlier research (Winslow, 1976) to 120 words per minute. Although an increased rate of presentation will permit greater flexibility in caption writing, captioners will still face considerable challenges in summarizing and condensing the verbatim script. This task requires the ability to distinguish key ideas from non-essential detail and to order information according to relative contribution to the story. In addition, captioners must take into account other factors that go into timing decisions, such as visual format and vocabulary level.

Visual Format:

Eye movement studies by Dr. Kenneth O'Bryan (1974, 1976) have indicated that the presentation rate of captions should vary depending on the complexity of the underlying video. Captions frequently lose the viewer's attention when they compete with strong action segments. Therefore, when the video contains compelling scenes, captions should be given additional reading time. During periods of relatively static video, the viewer tends to concentrate more fully on the captions, and presentation of the written information can occur at a faster rate.

O'Bryan's research has also found that reading patterns are affected during *shot changes*, those changes of picture or camera angle that cause the video to change. The eye saccades at shot changes, automatically returning to the beginning of the caption. More recent research supports this conclusion (Flagg, Carrozza, and Jenkins, 1980a). Flagg found that at shot changes the eye often leaves the captioned message and scans new visual material. Therefore, the captioner should avoid displaying a caption over a shot change.

Complexity of Vocabulary:

The rate of caption presentation should also reflect the importance and difficulty of vocabulary. For example, articles and prepositions require less reading time than abstract nouns: *and* requires less reading time than *remember*. Therefore, when captions contain more difficult vocabulary, 120 words per minute probably should not be exceeded. When the vocabulary is simpler, there is room for more flexibility.

Non-textual Information:

The captioner may manipulate caption display to communicate information that does not exist in the text of the caption. For example, the way that the captions are timed can identify speakers. Consider the scene when a character starts talking off camera. The camera moves to her after her speech has already begun. In this situation, her caption does not appear as she starts to speak, but instead is delayed until she comes on camera. When the display time of the captions is

controlled in this way, the hearing-impaired viewer can tell who is speaking. This is crucial in understanding dialogue.

Timing of captions can also imply rhythm and delivery cues. By controlling display times in conjunction with audio cues, captioners can indicate that a speaker has taken a pause, or that a speaker is talking in a slow and deliberate manner or in a rushed and impatient way.

Timing and Syntax:

The amount of time available for each caption generally is determined by the amount of time between shot changes and by the timing of visual and audio cues in the program. Time available, in conjunction with reading rate, directly affects the number of words each caption contains. The number of words in turn influences the amount of information conveyed in a caption. Number of words also influences the syntax of captions, sometimes hampering the application of the syntactic guidelines. For example, Level 3 sentences can contain some relative clauses, which increase sentence length. But many captions at Level 3 are shorter and less complex than the guidelines theoretically allow because of time limitations.

Spatial Placement

Standard Placement:

Traditionally, captions appear at the bottom of the picture. Perhaps this custom has its roots in technological constraints. Or maybe, when open captioning was the only technology available, it was a concession to hearing viewers, who found the presence of captions annoying and complained that captions disrupted their own viewing enjoyment.

Variable Placement:

To date, there are no research findings to support placement techniques. However, O'Bryan's studies did provide clear evidence of viewer priorities. Viewers tended to focus on new faces, mouths and areas of movement. In a study of captioned ZOOM with 40 profoundly deaf children, O'Bryan also found that the children looked back and forth from caption to action.

A study designed to compare procedures for spatial placement of captions is currently in prograss at The Caption Center (Flagg, Carrozza and Jenkins, 1980c). But until there is evidence to the contrary, there is no reason why captions should automatically be relegated to the lower third of the picture. The WGBH captioning equipment permits placement of

captions on any of ten horizontal lines on the television screen, from top to bottom. Words may also appear anywhere on a given line.

Like the temporal placement of a caption, spatial placement can affect its readability and the reception of non-verbal information. By placing each caption in an area where viewers are most likely to be looking, the captioner takes advantage of the attention-getting qualities of the video and caption reading is encouraged. So, to lessen the eye-movement span between caption and video, and to make the captions most accessible, a caption should be placed as near the focal point as possible. When there is a lot of action on camera, it may be positioned near the activity. When a character is the focal point, captions may appear close to the face.

Placement of Phrases:

The captioner must also attend to the division of captions into phrases. O'Bryan's eye movement research confirmed intuitions that the way a caption appears on the screen affects attention to it. For example, it was found that adult viewers tended to be less attentive to long, three-line captions. Perhaps the overall appearance of the large, full-frame captions was dry or intimidating. So, the information from three lines should be broken into one- or two-line captions. Within each two-line caption, line divisions should be further organized by thought units or syntactic phrases. This accomplishes some of the work that readers normally do for themselves.

Conveying Non-textual Information:

Caption placement, like caption timing, can tell the non-hearing audience who is speaking. If two or more people are engaged in conversation, captions may be placed on the speaker. In the same way, when a sound effect is heard, its word translation is put in the area which indicates its source; in this way, characters' reactions are put into context.

A Word of Caution:

Captioners must be sensitive to information that is conveyed visually, and accordingly use placement techniques with discretion. Captions must not obstruct the visual information that is required for program enjoyment and comprehension. Thus, for example, it is important to avoid covering faces and lip movements, since it can be very frustrating for the hearing-impaired audience to watch a speaker whose mouth or facial expressions are partially obscured. This practice also should be followed with any actions or objects that are important to the story. Only in this way does caption placement support rather than detract from reception of the total program content, verbal and nonverbal.

Special Effects

The WGBH computerized captioning system has the capability of producing special effects which can enhance captioned programs in different ways.

Movement:

Captions can flash, appear letter by letter or word by word, pop from one size to another, and move up or down on the screen. Flagg's preliminary eye-movement research (1980a) looked at captions which displayed either words or letters in a left-to-right sequence. This technique appeared to control and modify the reading pattern of the viewers by encouraging them to fixate on each word or letter as it appeared.

Color:

One of seven colors can be assigned to whole captions or to individual words within captions. Color can be used for emphasis, such as highlighting non-visible sound effects. Although this effect does not seem to attract more visual attention than average, Flagg found it may still be effective in aiding processing or memory storage (1980a).

Type style:

Two different fonts, or type styles, as well as upper case and lower case letters, may be selected. This special captioning feature may be helpful, as in the case of color, in drawing attention to particular words.

Overlays:

A typical overlay consists of two sentences or phrases which appear consecutively. The first sentence remains on the screen while the second one appears.

Both disappear simultaneously. Overlays may be employed to clarify meaning conveyed by difficult syntax. For example, by using an overlay, the second caption in the overlay can contain a pronoun which refers to a noun in the first caption. Pronouns generally are used at Level 1 only when the referent is on camera. With the overlay, the written referent is available for the reader to look back to.

Very preliminary research indicates that special effects don't appear to influence actual comprehension of captioned television. But these techniques nevertheless may be important as devices for attracting attention to the printed words. Captions often must compete with active video segments and a specific effect may command attention and increase the probability that the captions will be read. Finally, special effects may be important if only for contributing to enjoyment. Their incorporation can lend life and variety to captions, in much the same way that voice quality and tone add flavor and nuances to spoken words.

Examples of Captioned Scripts

The following segments from television programs captioned by the Multi-level Project demonstrate the application of the guidelines at each editing level. A few comments follow each captioned excerpt. Much more could be said; however, the focus is usually on inference, since this aspect of language is context dependent, and therefore is not easily expressed in guideline form.

In these comments, brackets indicate captions. Unless otherwise noted, the segments were captioned at 90 words per minute.

Level 1

In "The Hospital," an episode from *Learning Values with Fat Albert and the Cosby Kids*, two boys, Bill and Russell, have just found out from the doctor that they need to have their tonsils removed.

Original Script	Captioned Version
BILL: We can't go. We gotta go to the store for our mother.	We are afraid. We want to go home.
RUSSELL: She'll be awful mad if we don't go. They're giving double trading stamps.	We hate hospitals! Will you hurt us?
DOCTOR: Now boys, there is nothing to worry about; you'll fall asleep, then into the operating room and, whewww, it's all over.	No. I will help you. I will take out your tonsils.
BILL: That's what we're afraid of!	Don't hurt us!
BILL COSBY (the narrator intercedes): Well, Bill and Russell tried all kinds of excuses to get out of going to the hospital. And I mean *all* kinds. Listen to this one. (Back at home, Bill and Russell talk to their parents.)	The boys didn't want to go to the hospital. The boys wanted to stay home.
BILL: You better call the doctor right away and tell him that me and Russell have to stay home.	We want to stay home. Tell the doctor.
RUSSELL: Cough, cough.	Yes. Please!
FATHER: How come?	
RUSSELL: We're too sick to go to the hospital.	We can't go to the hospital.
BILL COSBY: Pretty bad, huh? Well, their folks thought so too. And so, after about a thousand more phoney excuses, Bill and Russell saw the handwriting on the wall.	The boys were afraid of the hospital. But Russell and Bill must go to the hospital.

Notice that the original script never explicitly states the boys' fears, except in Bill's response to the doctor's comment, "...it's all over," which has a double meaning. Bill chooses the meaning the doctor

did not intend and answers, "That's what we're afraid of!" The captions state their fear of hospitals directly.

The Level 1 reader is not expected to understand the purpose of the boys' lies and excuses to avoid the operation. Instead, this time is used to express their feelings explicitly and to reiterate the main plot development—that they are to go to the hospital.

In the captioned version, an overlay is used to "cheat" on syntax. [We want to stay home] appears on the screen first and remains while [Tell the doctor] is displayed. The latter caption may be considered an elliptical that-complement: Tell the doctor (that we want to stay home). This construction is not allowed at Level 1. But since the first caption remains after the second has appeared, the reader has the opportunity to refer back to it.

In another Fat Albert episode, "Junk Food," Albert forgets to appear as the rear half of an elephant in the gang's circus because he is too busy eating.

Original Script	Captioned Version
BILL COSBY: I was just thinking about having a little treat (holds up candy). This is my favorite here—genuine imitation orange. See, a little candy now and then, I mean it just doesn't hurt anything. I mean, if you don't overdo it. Now, the trouble with Fat Albert and his new pal Slim is that neither one of them knows when to quit.	I like candy. I eat a little candy. A little candy is not bad for people. But Fat Albert eats too much candy. Too much candy is bad for people.
(Later, the circus M.C. searches for Albert and finds him eating in the candy store.)	
M.C.: Oh, here you are! The scow and the dinghy. Come on!	Come with me.
ALBERT: Come on where?	Where?
M.C.: Where? Man, I thought elephants were supposed to have good memories.	To the circus. You forgot the circus.
ALBERT: Elephant...uh, oh. The circus!!! I forgot!	I was eating candy. I forgot the circus!
M.C.: Yeah, you forgot. You and your sappy pal here, you never forget to stuff yourselves with junk food.	You were eating junk food.

Bill Cosby informs the audience that "a little candy doesn't hurt *anything*." The captions clarify that it is actually people that he is referring to. His comment that Albert and Slim don't know when to quit is also inferential: Quit what?

An understanding of the M.C.'s comments depends upon the knowledge that elephants are supposed to have good memories. His criticism of Albert—"You never forget to stuff yourselves with junk food"—is veiled; it could conceivably be seen as a compliment about Albert's powers of memory. The caption states the criticism directly and uses the opportunity to define *junk food* while it appears in the video.

Level 2

In "Joshua's Confusion," a *Young People's Special*, an Amish boy, Joshua, tries to persuade his father to let him be more a part of the non-Amish world.

Original Script	Captioned Version
JOSHUA: You know the dairy man over on Route 22, John Gibbs?	You know the milk man? John Gibbs?
PAPA: Uh, huh.	Yes.
JOSHUA: His boy, Bobby, he's in my class. He invited some of the boys from school to come to his house next Friday to stay the night.	His son is in my class. Bobby invited me to his house Friday night.
PAPA: This is a time for work, Joshua. If we don't clear the field of stones, we can't plow. If we don't plow, we don't plant. If we don't plant, we don't harvest. A time for work, Joshua.	We will talk later. Now it is time for farm work. We must clear this field. We will plant seeds.

JOSHUA: He's my best friend at school.	Bobby is my best friend.
PAPA: The other Amish boys, you do not get on well with them?	Do you have Amish friends?
JOSHUA: Sure, but, but Bobby, he's my best friend. You know his father.	Yes. But Bobby is my best friend.
PAPA: Sure I do. Gibbs, a good farmer.	Joshua, Bobby's not Amish.
JOSHUA: He's invited some friends from school. It's a birthday. His mother and father approve.	Papa, Bobby asked friends to his birthday party.
PAPA: Joshua, there is yet much work to be done. The horse has to be unhitched and watered. We will talk of this later.	Joshua, we have work to do. We will talk later.

Joshua's father voices his disapproval of his son's involvement outside the Amish community only indirectly; "The other Amish boys, you do not get on well with them?" At Level 1, this inference might be fully clarified by captions like [Play with Amish boys] and [Don't play with Bobby]. But at Level 2, the reader is expected to be able to interpret [Do you have Amish friends?] to mean that the father prefers his son to play with his own kind. Later, this inferred meaning is made clearer by the father's caption, [Joshua, Bobby's not Amish], making his objection to the invitation more explicit.

As this segment ends, the camera pulls back so that the speakers appear as small silhouettes. For this reason, it is impossible to use caption placement to identify them. Therefore, in the last three captions, each speaker refers to the other by name.

In the *NBC Special Treat* "Rodeo Red and the Runaway," a young girl named Stacey meets up with Ella, a rancher, after she runs away from home. This segment was captioned at 120 words per minute.

Original Script	**Captioned Version**
STACEY: Could I ask you a question?	Could I ask you a question?
ELLA: Never ask permission. A friendship doesn't need fancy talk.	You can ask anything because we are friends.
STACEY: Your husband, Ben, what happened to him?	You had a husband, Ben. Where is he?
ELLA: He walked out that door. He said "Good-bye Ella. I'm going to the oil fields," 30 years ago. I think he'd had a bellyful of me and homesteading.	30 years ago, he walked out that door. He said, "Good-bye, Ella. I'm going to look for work." He didn't come back. I think he was bored with me and farming.
STACEY: You never heard from him again?	Did he write you?
ELLA: I got a postal card from Oklahoma City. It said, "Still looking for oil. Yours, Ben."	Once he sent me a postcard from Oklahoma City. It said "I'm still looking for work. Ben."
STACEY: Not even a "wish you were here"?	You think he misses you?
ELLA: Not even that.	No.
STACEY: I got a letter from Barbara yesterday.	I got a letter from Barbara yesterday.
ELLA: Your stepmother?	Your stepmother?
STACEY: Yeah.	Yeah.
ELLA: Anything interesting?	Does she say anything interesting?
STACEY: Same old stuff.	No, nothing new.
ELLA: What's that?	What?

STACEY: You know, how much she loves me, and she says she understands how I feel. She's not trying to take my mother's place. She just wants to be my friend. All that kind of stuff.	She says she loves me and she understands my feelings. I don't believe that. She says she wants to be my friend.
ELLA: Well, that doesn't sound too bad. In fact, I wish Ben would write me a letter with "all that kind of stuff."	Well, that's a really nice letter. I wish Ben would write me a letter like that.

Note that Ella never explicitly states that Ben left for good when he went away 30 years ago. This information is added in the captioned version. In the original script, Stacey asks, "You never heard from him again?" but Ella doesn't answer her explicitly. Instead, she implies that the only contact with him she's had since he left was the postcard from Oklahoma.

In Stacey's last comments in the original script, her disbelief in her stepmother's love is expressed only through her tone of voice. In the captioned version, her skepticism is made explicit—[I don't believe that]—for deaf viewers.

Level 3

In "The Prowler," an episode from *The Flintstones*, the town of Bedrock is terrorized by a burglar on the loose. Wilma and Betty begin to learn judo in self-defense. In this segment, Barney is mowing the lawn while Fred watches, stewing over something.

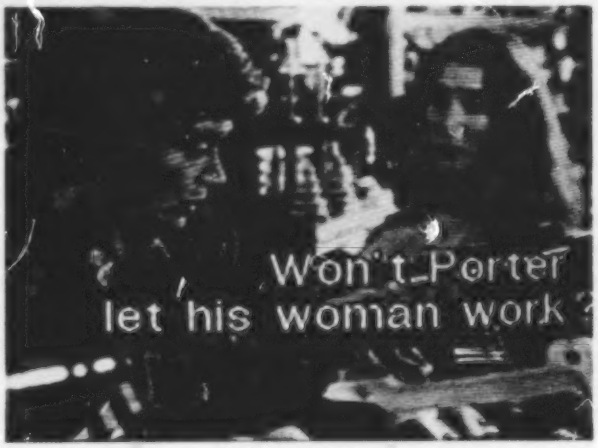
Original Script	Captioned Version
FRED: What did you say?	I'm angry.
BARNEY: I didn't say anything. I'm thinking.	Don't be mad.
FRED: Well, it's either the lawn mower or I can hear you thinking. And I know what you're thinking.	It's wrong for women to learn judo.
BARNEY: And I still think it's OK for a woman to take judo lessons.	Judo is OK for women.
FRED: Well, I don't. It's a waste of money and it's a waste of time talking to you.	You're wrong.
BARNEY: Well, at least I don't have to hide under the bed when the prowler shows up.	If the prowler comes, you'll hide.
FRED: Who said I did?	No.
BARNEY: Wilma told Betty. She heard a noise and tried to get under the bed. And she couldn't. You were there first.	Yes. Betty isn't scared.
FRED: All right, smart guy. Let's see who gets under the bed tonight. I'll prove to you you're wasting your money.	Wrong. Betty really is afraid and I'll prove it.
BARNEY: Like how?	How?
FRED: After you've gone to bed, I'll sneak in dressed like a burglar. Then what do you think your wife will do?	Tonight I'll dress like a prowler and scare Betty.
BARNEY: She'll say, "Hello Fred. Why steal it? Just borrow it as usual."	She might throw you.
FRED: All right, funny man. If she doesn't scream for help and jump under the bed, I'll pay for the judo lessons, OK? Is that a bet?	No. She'll scream for help and hide under the bed. Let's bet.
BARNEY: It's a bet. I'd be less than a husband if I didn't stand behind my wife. With her judo lessons, it's the safest place to be.	OK. I think you're wrong about Betty. She's good at judo.

This segment was difficult to caption because time was very short due to frequent shot changes. The emotion which is conveyed through tone of voice in the original is explicitly expressed in the first caption—[I'm angry]. In Fred's second line of the original, the reader must infer what Fred knows Barney is thinking—that it's fine for women to take judo lessons. In the captioned version, Barney states this belief himself and Fred's opposing opinion is also expressed directly. Barney's accusation about Fred's cowardice—"Well, at least I don't have to hide under the bed when the prowler comes"—is indirect: the caption is more explicit.

Information which adds humor to the section (Barney standing behind his wife; Betty telling him to borrow the money as usual) is deleted in order to leave time to express the plan of action that will carry the plot forward.

In the *ABC Afterschool Special* "Tell Me My Name," a young woman named Alexandra is becoming acquainted with her mother Emily, who gave her up for adoption when she was a baby. In the following scene, Mrs. Tupper bumps into Emily in a shop and meets Alexandra for the first time. The women discuss Emily's possible role in government.

Original Script	Captioned Version
MRS. TUPPER: When are you going to give me your answer?	When will you decide about the job?
EMILY: Well, I still haven't made up my mind. I'm still not sure. I'm sorry.	I don't know. I'm sorry.
MRS. TUPPER: He who hesitates is lost, Emily. And the political machine runs dry without oiling. Mr. Winston Langley himself is waiting for your answer. I don't know how much longer I can hold him off.	You should decide soon. Mr. Langley has been waiting for your answer.
EMILY: I will call you, I promise.	I'll call.
MRS. TUPPER: OK. Nice to meet you, dear.	OK. Good-bye dear.
ALEXANDRA: Bye.	Bye.
EMILY: Bye.	Bye.
(Mrs. Tupper leaves.)	
ALEXANDRA: Political machine?	What job?
EMILY: Oh, um...They want me to run for state legislature.	They want me to work in state government.
ALEXANDRA: You're kidding!	You're kidding!



EMILY: No. I've been working with an environmental group and I seem to have caught somebody's eye. But I don't want to discuss it right now.	No. Mr. Winston Langley wants me. But I don't want to discuss it now.
ALEXANDRA: Doesn't Uncle Porter want the little woman out of the house?	Won't Porter let his woman work?
EMILY: Now listen Alexandra. You have good reason to be angry with me, but you have no reason to be angry with Porter. He is a fair and reasonable man...most of the time.	I understand why you're angry at me. But don't be angry at Porter. He's a fair man. Usually.
ALEXANDRA: You haven't told him yet, have you?	Did you tell him about me?
EMILY: No, I just haven't found the right time. But I will.	Not yet, but I will.
ALEXANDRA: Will you?	You're scared.

The captioned version requires readers to draw some inferences on their own. For example, Mr. Langley is not identified explicitly and Uncle Porter's wife is referred to as "his woman." An understanding of Alexandra's question, "You haven't told him yet, have you?" is crucial for an appreciation of the ensuing tension in the program, so it is restated more explicitly. However, the reader is still expected to figure out independently what it is "about me" that Porter should know—that Alexandra is Emily's daughter. Finally, tone of voice makes it clear that Alexandra's question "Will you?" is meant as a challenge and not as a request. The caption makes the intent of the question obvious.

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